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Bridge to Student Success?: An Evaluation of the Effectiveness of the University of Mississippi's JumpStart Summer Bridge Program

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BRIDGE TO STUDENT SUCCESS?: AN EVALUATION OF THE EFFECTIVENESS OF THE UNIVERSITY OF MISSISSIPPI'S JUMPSTART SUMMER BRIDGE PROGRAM

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ABSTRACT

Summer bridge programs (SBPs) are a popular programmatic intervention of colleges and universities to assist students with the transition from high school to college and provide students with the academic and social tools they need to be successful. Despite their popularity, a survey of relevant literature indicated that bridge programs are not routinely evaluated to measure their effectiveness. This study sought to contribute to the body of existing literature by evaluating the effectiveness of the University of Mississippi's (UM) JumpStart Summer Bridge Program and its impact on student success outcomes, including GPA, institutional retention, and degree completion, to establish concrete actionable data for program staff and university administrators. Data was retrieved from the Office of Institutional Research Effectiveness and Planning (IREP), the Office of the Registrar, and the Office of Pre-College Programs. IREP provided the data file for the 2013-2016 freshman cohorts, which included first-semester grade point average, first-year grade point average, retention status, completion status, and JumpStart participation, demographic information, and pre-college academic performance. To address the study's research questions, a series of t-tests were conducted to examine differences in first-semester GPA, first-year GPA, and retention and completion for JumpStart participants and non-participants. Logistic regression was used for the analyses of predictors of retention and four-year graduation. Key findings of the study included: (a) Jumpstart participants earned significant lower first-semester and first-year GPAs than non-participants; however, participants also entered UM with significantly lower high school GPA and ACT composite scores; (b) logistic

regression analysis showed JumpStart to be a significant, positive predictor of retention to spring semester; (c) females, Black/African American, Other Minorities, and resident students were retained to spring semester at a significantly higher rate than freshmen who did not participate in JumpStart; and (d) Black/African American JumpStart participants earned a significantly higher first-year GPA; further, retention rates for Black/African American JumpStart participants were significantly higher in spring semester, year two, and year three. Further research is needed to examine program outcomes over a longer period of time and through additional quantitative and qualitative methods that take into account the lived program experience from the student perspective.

DEDICATION

I dedicate this work to my family with love, deep gratitude, and appreciation. Their never-ending support, encouragement, and confidence in me – even when I lacked confidence in myself – always inspired me to keep moving forward. Specifically, I dedicate this to my niece and nephew, Mary Mac and Tripp. Remember to always dream big. Most of all, thank you to God: “Thy mercy, my God is the theme of my song, the joy of my heart and the boast of my tongue. Thy free grace alone from the first to the last, has won my affection and bound my soul fast.”

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IDENTIFICATION OF THE PROBLEM OF PRACTICE

One of the most pressing issues facing American colleges and universities is the number of students who fail to graduate with a degree. An increased focus on access to higher education over the last four decades led to gains in the number of students served with more than double the enrollment from 1980s nine million students to 2011s 20 million students, but the number of students obtaining a degree has not kept pace with the increased enrollment (Tinto, 2012). Now more than ever, "access without attainment is being viewed as pointless" (Umbach, Lattuca, Museus, Hartley & Melguizo, 2011, p. 459). Failure to complete college is costly on many fronts. It decreases the population of college-educated adults in the United States, which is expensive for society as a whole. It is also detrimental for colleges and universities, which have invested substantial resources to enhance student recruitment and success, and for families and students, who amass significant debt during college without receiving the financial and personal benefits associated with obtaining a degree (Mayhew et al., 2016; Tinto, 2012). According to the National Student Clearinghouse's most recent Signature Report, the six-year completion rate of first-time, degree-seeking students who entered any postsecondary institution in the Fall of 2011 was 56.9%, which means that 43.1% of students failed to graduate within that same time frame (Shapiro et al., 2017). By further breaking down the national completion numbers by the level of the institution the student entered, 66.7% of students who started at four-year institutions and 37.7% of students who started at two-year institutions completed college within six years (Shapiro et al., 2017). While the overall national completion rate represents an increase of 2.1% points from the Fall 2010 cohort (Shapiro et al., 2017), it remains low. For students who entered

at a four-year public institution, the completion rate was slightly better at 64.7% (Shapiro et al., 2017). Numbers like these reiterate the completion problem facing institutions of higher education in the United States.

A similar, yet related problem is the time it takes students to complete a degree. "Longer time-to-degree [encourages] students to borrow more, and in some cases to borrow more money than they can repay out of their future earnings – especially if they end up failing to graduate" (Bowen & McPherson, 2016, p. 32). Long delays to graduation are problematic for students who continue to accumulate student loan debt without obtaining a degree. According to data, "in the early post-World War II years, roughly 60% of [Bachelor of Arts] recipients received their degree by age 22, whereas, more recently, this percentage has hovered around 40%" (Bowen & McPherson, 2016, p. 31). Perhaps most concerning, national studies have shown that more time does not always lead to successful degree completion. The National Student Clearinghouse most recently examined the 2009 cohort and found that only an additional 6.1% of the cohort completed their degree in the two years since 2015, bringing their overall eight-year completion rate to 59% (Shapiro et al., 2017). Under these circumstances, students may continue to, in many cases, borrow more money, without successfully obtaining a degree.

The latest National Student Clearinghouse statistics also continued to shed light on troubling trends in overall degree completion outcomes by race or ethnicity. The negative consequences from "low success rates … include lower lifetime earnings and higher rates of poverty. Moreover, the negative consequences that accrue to society … include lower tax revenues, higher rates of incarceration, and lower rates of civic participation throughout society" (Museus, 2014, p. 190, citing Baum et al., 2010; Swail, 2004). These negative consequences disproportionately affect minority students due to historically lower completion rates that fall

below the national average. Among all students in the 2011 cohort, Asian and White students had considerably higher completion rates (68.9% and 66.1%, respectively) than Hispanic and Black/African American students (48.6% and 39.5%, respectively) (Shapiro et al., 2017). The completion rates for students who entered college at a four-year, public institution showed similar disparities. Among students who began at a four-year public institution in Fall 2011, Black/African American students had the lowest six-year completion rate at 46.0%, with Hispanic students almost ten percentage points higher at 55.7% (Shapiro et al., 2017). In contrast, 71.1% of White students and 75.8% of Asian students completed a degree within the same period (Shapiro et al., 2017). Historically, statistics have also shown that attrition has a higher impact on economically disadvantaged students as low-income students are three times less likely to complete a four-year degree than higher income students and only 7.5% of students who are eligible for Pell grants complete a bachelor's degree within six years (Tinto, 2012).

In order to increase retention and improve completion rates, many colleges and universities have added academic support programs or interventions intended to increase the number of students who persist at the institution and successfully complete their degree. One type of intervention that has become increasingly popular for colleges and universities to offer to assist students with the transition from high school to college and promote student success is summer bridge programs (SBPs) (Allen & Bir, 2012). Other common programmatic interventions that have proven results when it comes to first-year retention include first-year experience programs, learning communities, investments in faculty development, and improvements to orientation programs (Tinto, 2012; Kuh, 2008). Traditional summer bridge programs provide students with both academic and transitional assistance during the summer prior to their first year of college (Walpole, Simmerman, Mack, Mills, Scales, & Albano, 2008).

SBP students participate in summer courses or other programs before their first semester of general enrollment (Mayhew et al., 2016). Common program focuses of SBPs include shoring up academic deficiencies for underprepared students, orienting students to campus culture, familiarizing students with college life, and developing students' self-esteem and sense of self-efficacy (Kallison & Stader, 2012; Mitchell, Alozie, & Wathington, 2015; Garcia, 1991).

The effects of SBPs on retention rates are perhaps the "most important" (p. 15) outcome of bridge programs (Walpole et al., 2008). Studies have shown that "students who benefit from bridge programs stay in college longer, take more credits, and graduate at higher rates than underprepared students who do not attend bridge programs" (Walpole et al., 2008, p. 15). However, other studies have criticized these findings because most of this research was conducted without the use of a control group, "making it difficult to attribute increased retention rates to the bridge programs" (Walpole et al., 2008, p. 15; Kezar, 2000; Evans, 1999; Logan, Salisbury-Glennon, & Spence, 2000). Studies have also shown mixed results regarding summer bridge programs and their impact on grade point averages (GPA) and achievement test scores (Walpole et al., 2008; Ackermann, 1991; Evans, 1999; Logan et al., 2000).

This study seeks to contribute to the body of existing literature by evaluating the effectiveness of University of Mississippi's Summer Bridge Program JumpStart and its impact on student success outcomes, including institutional retention and degree completion. Due to conflicting results of prior studies, criticism has mounted that there is a need for more research on summer bridge programs (Walpole et al., 2008; Allen & Bir, 2012). This study also intends to provide a descriptive analysis of prior JumpStart participants, including gender, ethnicity, resident status, and precollege academic variables, and explore emerging trends in participation. While there have been studies on other summer bridge programs around the country, the

evaluation of individual summer bridge programs is important because programs differ greatly from institution to institution (Cabrera, Miner, & Milem, 2013). For this reason, it is important to understand the local context of a summer bridge program. To my knowledge, this will be the first study to examine JumpStart over a multi-year period.

LOCAL CONTEXT OF THE PROBLEM OF PRACTICE

Founded in 1848, the University of Mississippi (UM) is the flagship university for the state of Mississippi with its main campus located in Oxford, four regional campuses located in Booneville, Southaven, Grenada, and Tupelo, and a University Medical Center located in Jackson ("About UM", 2018). This study was conducted on the main campus in Oxford. UM is a Carnegie R1 doctoral university, signifying its place among universities with the highest level of research activity ("About UM", 2018). Total student enrollment for the 2016-2017 academic year was recorded at 24,250 for all campuses, including the UM Medical Center ("Facts & Statistics", 2018). Enrollment for the main Oxford campus totaled 20,453 in 2016-2017, including 3,984 incoming full-time and part-time first-time freshmen students ("Fact & Statistics", 2018). The incoming 2016 freshman cohort posted an average ACT score of 25.2 and overall high school GPA of 3.57 ("Facts & Statistics", 2018). White enrollment for new freshmen was 3,178 (79.8%), with minority enrollment recorded at 805 (20.2%) students ("New Freshmen Enrollment", 2018). While UM has demonstrated some gains in the area of minority enrollment in recent years, the tenuous relationship between UM and specifically African American student population can be tracked back to the events surrounding the 1962 enrollment of James Meredith as the university's first African American student. Black/African American student enrollment on the Oxford campus increased by 17.5% from Fall 2009 (1,995 students) to Fall 2010 (2,345 students), and reached a high of 2,766 students in Fall 2013 before declining or showing little growth over the past three years. In Fall 2017, Black/African American student

enrollment on the Oxford campus was 2,552 students ("Overall Enrollment", 2018). A recent study brought further attention to the enrollment disparity of African American students at state flagship universities, including UM ("Disparities at state flagships", 2018).

Despite UM's relatively open admissions standards, the university has posted impressive retention rates in recent years. In 2014, UM achieved its highest fall-to-fall retention rate ever, with 86.5% of freshmen returning for their sophomore year ("Retention Trends", 2018). The fall-to-fall retention rate for the 2016 new freshman cohort remained near record levels with 85.2% returning to UM. The 2014 cohort's year three retention was 77.3%, while 71.9% were retained to their fourth year. Year three retention rates have hovered between 71.3% and 77.3% over 2006-2016. Year four retention rates have been consistently lower, ranging from 65.5% to 71.9% over the same ten-year period ("Retention Trends", 2018).

A deeper examination of the UM's 2014 cohort retention rates by racial or ethnic background raises concerns. Year two retention was comparatively high for both White and Black/African American students, with retention rates at 87% and 87.2%, respectively; conversely, the gap widened considerably for their junior and senior year ("Retention Trends", 2018). For the 2014 cohort, 79.1% of White students returned for their third year, whereas 68.3% of Black/African American students returned, a difference of 10.8%. The gap widened even further for seniors returning for their fourth year, with 74.2% of White students returning and only 59.9% of Black/African American students returning to UM. ("Retention Trends", 2018). It is evident from the data that retention efforts or academic support programs at UM should be examined over a multi-year period to ensure that students of all races and ethnicities are benefitting as expected.

While retention rates have been consistently on par with similar Southern University Group (SUG) schools, UM's graduation rates are below the national averages for students entering four-year public universities. According to institutional data, only 38.6% of the 2011 cohort of first-time freshmen graduated within four years ("Graduation Trends", 2018). Five-year and six-year graduation rates improved to 55.9% and 60.1%, respectively. The four-year graduation rates for the 2012 and 2013 cohorts showed slight improvement with increases to 43.8% and 46.0%, respectively. Like UM's institutional retention data, a closer examination of the graduation rates by race and ethnicity reveals troubling gaps between races. For the 2011 cohort of full-time freshmen, 42% of White students graduated within four years, compared with just 23.7% of Black/African American students, a difference of 18.3%. The five- and six-year graduation rates reveal that the gap between races continues to widen even with more time to complete their degree. Significantly, 60.2% of White students graduate within five years, whereas 37.4% of Black/African American students graduate in a similar period (a difference of 22.8%). The six-year graduation rate shows a similar gap: 64.2% of White students graduate within six years, compared with only 42.4% of Black/African American students (also a difference of 21.8%) ("Graduation Trends", 2018).

UM has implemented several academic support units and student success programs since it began a major focus on retention efforts in 2008. UM's Center for Student Success and First Year Experience (CSSFYE) has been an instrumental student support initiative that centralized the University's first year experience program, oversees advising for undeclared Freshman Studies students, and offers academic support programs to students ("CSSFYE", 2018). Another example is FASTrack, a first-year learning community where students take three classes with the same group of twenty students, which provides students with the benefit of smaller classes and a

community of peers ("FASTrack", 2018). JumpStart is another program that was implemented to give UM students a "jumpstart" on college in order to make their next four years a success, and, presumably, culminate with obtaining a degree ("JumpStart", Pre-College, 2017).

About the JumpStart Summer Bridge Program

JumpStart is a summer program at the University of Mississippi operated and managed by the Division of Outreach and Continuing Education's Office of Pre-College Programs. Unlike many other bridge programs that target specific populations of students, entry into JumpStart is open to all incoming first-year students at the University of Mississippi regardless of academic ability or student background characteristics. The program is not limited to at-risk students. UM promotes JumpStart as a way for incoming students to get a "jumpstart" on their college experience. Promotional materials state the intent of JumpStart program activities is "to enhance the college experience and give students the tools they need to make their next four years a success" ("JumpStart", Pre-College, 2017, para. 2). The program does identify specific program goals or desired outcomes for students.

JumpStart participants have the opportunity to earn up to six credit hours per session they register to attend. There are three available sessions: Session One, Session Two, and August Intersession. The two-week August Intersession option was added in Summer 2015. JumpStart participants live in campus housing with other JumpStart students. Students are eligible to take any college courses offered by UM provided they meet the prerequisites; however, the JumpStart office recommends certain courses, including courses in the sciences, mathematics, history, humanities, social sciences, fine arts, and other electives. Students are enrolled in EDHE 105, UM's first-year experience course, for one of their two courses unless they are in FASTrack or an intensive language program. Students also have the opportunity to take developmental studies

courses if they do not have a 17 ACT or 400 SAT subject area score in a required subject. JumpStart requires all students to participate in SkillStart, a series of seminars, panels, and programming designed to teach students study, time management, leadership, and team-building skills. JumpStart also requires students to attend proctored study hall for five hours per week. JumpStart KickOff, a required program orientation, is mandatory for all JumpStart students. In addition to SkillStart and JumpStart KickOff, students are assigned a JumpStart peer leader to mentor and guide them throughout the program ("Frequently Asked Questions", Pre-College, 2017).

The cost of JumpStart is session-based. For Summer 2018, the First or Second session fees for in-state Mississippi residents include the following: $150 registration fee, $150 program fee, $2047.50 tuition for two courses, $520.00 housing fee, $350.00 meal plan, and a university-assessed $25.00 capital improvement fee per course, for a total of $3242.50 per session. The total fees for non- residents increases to $5290.00 due to non-resident tuition. All JumpStart students enrolled in six hours receive a half-tuition scholarship at the in-state level from the University of Mississippi. The scholarship reduces the total cost per session to $2218.75 for an in-state student and $4266.25 for a non-resident student. The total cost for August Intersession JumpStart are lower due to reduced meal plan, housing, and tuition costs. The total cost for in-state residents is $1836.25, with the half-tuition scholarship bringing the total to $1324.37, compared with the total cost for non-residents at $2860.00, or $2348.12 with the half-tuition scholarship (at the in-state level) ("Costs", Pre-College, 2017). As shown in Table 1, the total scholarship investment by UM is considerable (M. DeLoach, personal communications, February 21, 2018). There are also costs associated with running the program incurred by the Division of Outreach and Continuing Education.

Table 1. *JumpStart Scholarship Investment Total, 2013-2017.*

Year	Scholarship Total
2013	$134,539.00
2014	$129,707.00
2015	$133,292.00
2016	$213,894.00
2017	$215,127.00

Pell grants are available for JumpStart for students who qualify for federal financial aid, but students must complete a 2017-2018 Federal Application for Student Financial Aid (FAFSA) by June 30 of each year in order to determine eligibility ("Frequently Asked Questions", Pre-College, 2017). It is unclear how many students utilize federal financial aid to participate in JumpStart. It is a strong presumption that the high cost of JumpStart is a barrier to participation, particularly among minority and other underrepresented students.

Enrollment in JumpStart has shown inconsistencies from year to year, as observed in Table 2. In 2017, fewer than 5% of incoming freshmen (143 of 3,551 new freshmen) participated in JumpStart (M. DeLoach, personal communications, January 11, 2018).

Table 2. *JumpStart Enrollment, 2011-2017.*

Year	JumpStart Participants	Non-Participants
2011	164	3,398
2012	105 (-35.98%)	3,258
2013	178 (69.52%)	3,396
2014	209 (17.42%)	3,590
2015	248 (18.66%)	3,718
2016	205 (-17.34%)	3,757
2017	143 (-30.24%)	3,551
Total	1,252	24,668

Interestingly, enrollment numbers for the past three cohorts indicate that non-resident student enrollment in JumpStart has outpaced resident student enrollment despite the higher cost for non-

resident students (see Table 3) (M. DeLoach, personal communications, January 23, 2018). This study will further examine trends in resident versus non-resident enrollment over the 2013-2016 JumpStart cohorts.

Table 3. *JumpStart Enrollment by Resident Status, 2015-2017.*

Cohort Year	Resident Students	Non-Resident Students	Total
2015	76	172	248
2016	58	147	205
2017	56	87	143
Total	190	406	596

Other university efforts geared toward retention, including FastTrack and CSSFYE's Freshman Experience program, have received praise for their positive impact on retention at UM. It is apparent that assessment and evaluation of JumpStart's program effectiveness must expand in order to determine if it has a similarly positive impact on retention. If this study indicates a positive relationship between JumpStart participation and retention and degree completion, particularly for minority and other underrepresented students, JumpStart could be an existing university program that is in position to be modified or expanded in order to boost student success outcomes, particularly for traditionally underserved and underrepresented populations.

PROFESSIONAL POSITIONALITY AND ASSUMPTIONS ABOUT THE PROBLEM OF PRACTICE

I am assuming the role of scholar-practitioner in this study. I serve as the Associate Director of the Division of Outreach and Continuing Education at the University of Mississippi. The Division of Outreach and Continuing Education is an auxiliary unit of the University of Mississippi that encompasses ten departments: Academic Outreach, Business and Finance, College Programs, General Studies, Marketing and Communications, Outreach Events and Services, Pre-College Programs, Professional Development and Lifelong Learning, Regional Campuses, and Technology and Interactive Video. The Office of Pre-College Programs operates JumpStart.

In my role, I work directly with the Associate Provost and Director of Outreach and Continuing Education to engage in a variety of tasks, including program assessment, strategic and organizational planning, policy development, academic affairs, accessibility, and other large-scale projects. I was promoted to my current role in July 2018. My previous title was Program Manager for Planning and Assessment, a position I began in July 2014. Prior to my current position, I worked as Associate Director of Career Development at Samford University's Cumberland School of Law and as legal Counsel in the United States Senate. My background in law, policy, and higher education have conditioned me to focus on effectiveness and data. Effectiveness is defined as "the ability to be successful and produce the intended result" ("Cambridge Dictionary", 2018). In order to be effective, institutions must have a clear

understanding of where they are now and where they want to be in the future. Institutional data is a driving determinant in this process as administrators are called on to make decisions based on sound evidence (Terkla, 2008).

Given the increased importance placed on accountability, assessment, and effectiveness in higher education today, and particularly in light of budget constraints, the ability to demonstrate evidence of program effectiveness is critical. Understanding the true impact of programs like JumpStart allows university administrators to make informed decisions regarding the best use of limited institutional resources. According to the American Council on Education, "the degree to which institutions can harness their resources to achieve their objectives will depend upon the clarity of these objectives and the institution's willingness to set priorities and solve its problems" ("Institutional Effectiveness", 2018, para. 1). The availability of actionable information that can inform planning at the program and institutional level is critical. Actionable information, in contrast to "pedestrian information … makes obvious the next steps an institution should consider" (Voorhees, 2008, p. 80).

In light of this, my goal for this study is to establish actionable information about the JumpStart program by evaluating JumpStart's effectiveness as it relates to institutional retention and degree completion. I also intend for the study to provide descriptive analysis of JumpStart participants, including gender, minority, resident status, and precollege academic variables, and explore trends that emerge from data analysis. My professional interest in this study began with my background in assessment. Research has shown that institutions are not routinely evaluating summer bridge programs to assess their effectiveness and determine whether the programs are meeting their intended outcomes (Strayhorn, 2011; Cabrera et al., 2013). That trend holds true for the University of Mississippi. To my knowledge, there has never been an intensive, multi-

year examination of JumpStart as it relates to analysis of participants and the program's impact on student success outcomes like retention and completion. While there have been studies on other SBPs around the country, the evaluation of individual SBPs is important because programs differ from institution to institution (Cabrera et al., 2013). Of the 11,650 new freshmen at UM since 2015, preliminary data shows 690 students, or 5.9%, enrolled in JumpStart. If JumpStart participation is shown to have a positive impact on retention and degree completion, it could "represent a potentially untapped resource" (p. 88) for UM that could be expanded or tailored to improve the university's retention and completion numbers (Douglas & Attewell, 2014). Findings will be shared with Pre-College Programs staff and with the Office of the Provost in order to provide actionable information to direct financial resources, inform program costs and scholarship decisions, influence student recruitment, and, ultimately, improve the University's overall retention and completion efforts.

Another driving assumption for this study is my perception that minority and/or other at-risk students do not participate in JumpStart as frequently as White students and students who are not from low socio-economic backgrounds. In their early stages, summer bridge programs were implemented to serve underprepared students by easing the transition from high school to college (Ackermann, 1991; Garcia, 1991). While not all bridge programs are limited to at-risk students, including JumpStart, it raises questions about access and equality if there is little to no participation by minority or other underprepared populations. By examining JumpStart's effectiveness as it relates to retention and completion with a lens on non-White and other underprepared populations it is my hope that my findings will provide support to the Office of Pre-College Programs to make program decisions.

CONTEXTUALIZATION OF THE PROBLEM OF PRACTICE

Within Theoretical Framework and Scholarly Literature

Tinto's (1993) longitudinal model of institutional departure guides the design of this study. In large part, the increased prevalence of summer bridge programs has stemmed from Tinto's longitudinal model of institutional departure. Tinto's model proposed that students who persist and succeed in college are those who are able to integrate successfully into an institution's social and academic environment. Tinto's model contains four key components of a student's experience with an institution: pre-entry characteristics, including past academic performance and family characteristics, goals and commitments, institutional experiences, and academic and social integration (Tinto, 1993).

Figure 1. *Tinto's Longitudinal Model of Institutional Departure (1993).*

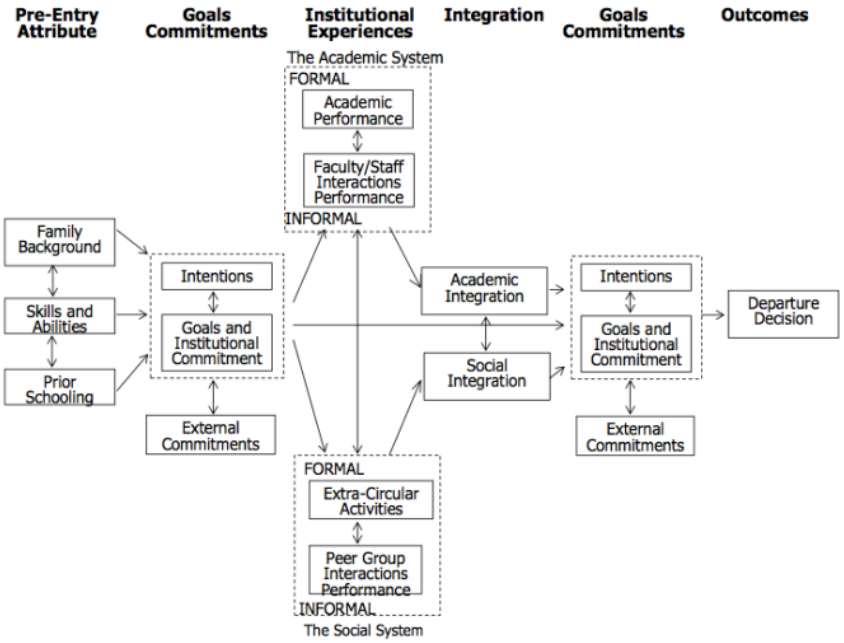

Figure 1. Tinto's Longitudinal Model of Institutional Departure (Student Integration Model), Tinto, V. (1993). *Leaving College: Rethinking the Causes and Cures of Student Attrition*, University of Chicago Press, Chicago, IL.

> Broadly understood, [the model] argues that individual departure from institutions can be viewed as arising out of a longitudinal process of interactions between an individual with given attributes, skills, financial resources, prior educational experiences, and dispositions (intentions and commitments) and other members of the academic and social systems of the institution. The individual's experiences in those systems, as indicated by his/her intellectual (academic) and social (personal) integration, continually modifies his or her intentions and commitments. (Tinto, 1993, p. 113, 115)

Ultimately, "students' subsequent intentions and commitments then lead to a departure decision" (Mayhew et al., 2016, p. 362). Students make a final decision about degree completion by "weigh[ing] their personal and professional goals against their external commitments and the

level of support they have received from both the academic and social communities in which they participate[d]" (Suzuki, Amrein-Beardsley, & Perry, 2012, p. 90).

While Tinto's model of institutional departure remains widely used and frequently cited, aspects of his theory have been critiqued (Mayhew et al., 2016; Museus, 2014). Some scholars have commented on Tinto's theory because of perceived "culturally biased foundations" (p. 195) within his integration theory, particularly the idea that in order to be successful in college students must sever ties with their precollege community and cultures (Museus, 2014; Mayhew et al., 2016). Tierney (1992) was among the first to point out the problems with this assertion for students of color, whose precollege cultures and communities may be vastly different from the institutions they attend. A second critique is that Tinto's theory is overly self-deterministic, meaning "it overemphasizes students' roles in succeeding in college, without adequately acknowledging the responsibility of institutions to foster these students' success" (Museus, 2014, p. 196). In later works, Tinto (2016) has worked to address this criticism by adding concrete recommendations for institutional action. There is widespread understanding that the way institutions structure support programs and other interventions does play a key role in shaping undergraduate success or failure. A third critique questions the strength of the relationship between academic and social integration and student success (Mayhew et al., 2016) on two fronts: one, calling into question the strength of the empirical research (Braxton, Hirschy, & McClendon, 2014; Braxton & Lien, 2000) and, two, acknowledging that the lines between academic and social integration are frequently blurred (Museus, 2014). The final critique of Tinto's student departure theory is the drift from a focus on the "psychological dimension of students' connections to their institution" (Museus, 2014, p. 198) to behavioral measures of

academic and social integration. The psychological constructs of students' perceptions and sense of belonging has been largely overlooked (Museus, 2014, citing Hurtado & Carter, 1997).

Taking into account these notable criticisms, Tinto's model of institutional departure continues to provide the theoretical foundation for many retention programs and services across higher education. It is most important to this study because of its focus on the academic and social integration of the student, which lies at the heart of the JumpStart summer bridge program. "[Tinto's model] indicates that student retention rates increase when students integrate into and become more mutually supportive with both academic and social elements of the university" (Bai & Pan, 2009, p. 288). Therefore, it manifests as the combination of a student's formal and informal academic and social interactions within the institution. Tinto's research on retention has "helped university staff and faculty understand the interactions between the academic and social elements of the college experience that often cause students to withdraw voluntarily from college before obtaining their degrees" (Suzuki et al., 2012, p. 88). Students who do not have positive experiences in *both* the academic and social systems are in danger of leaving the institution because both influence the students' commitment, particularly in the crucial first year of college.

In response to Tinto's model of institutional departure, many colleges and universities have added programs or interventions designed to provide support (academic, social, and financial) and help students successfully integrate into the university and ultimately complete their degree. Tinto (2016) added to his original longitudinal model in recent years by recognizing four common conditions associated with improved retention: expectations, support, assessment and feedback, and involvement. Tinto (1997) noted the significance of classroom experiences on student success and persistence, specifically noting that learning communities

were uniquely situated to bridge the gap between social and academic integration. "Engagement matters and learning communities with their shared learning experiences may serve to bridge the academic-social divide that typically plagues student life. If true, then perhaps learning communities with their emphasis on bolstering academic confidence through small group interaction and other forms of engagement merit closer investigation" (Allen & Bir, 2012, p. 520). Tinto also encourages institutions to focus their action on the first year of college because early investments are likely to produce the greatest gains in retention (Tinto, 2012).

The antidote of learning communities (LCs) to the college retention and completion problem is not new to the higher education landscape (Allen & Bir, 2012). LCs typically include the following key elements: students typically take a set of linked courses and often take as many as three or more classes together with the goal of preparing students for the "rigors of college" life (Allen & Bir, 2012, p. 520). The simplest learning community model requires the enrollment of students in at least two classes together (Shapiro & Levine, 1999). Researchers have cited learning communities as having a positive relationship with student success outcomes like grades, retention, and graduation (Zhao & Kuh, 2004). Kuh (2008) also identified learning communities as one of ten high impact practices. Zhao and Kuh's (2004) in-depth study of learning communities at 365 four-year institutions observed "enhanced academic performance, integration of academic and social experiences, gains in multiple areas of skill, competence, and knowledge, and overall satisfaction with the college experience" (p. 130-131). Other studies have recognized the ability of learning communities to foster peer group support, student involvement in classroom learning and social activities, perceptions of greater academic development, and greater integration of students' academic and nonacademic lives (Allen & Bir, 2012, citing Pascarella & Terenzini, 2005). The unique ability of LCs to touch on both the

academic (shared knowledge) and the social (shared knowing of each other) sets it apart among interventions to improve institutional retention. Significantly, while the positive effects from learning communities were more evident for freshmen, Zhao and Kuh (2004) saw positive effects into the senior year even where participation in the learning community occurred very early in the students' college years.

Summer bridge programs (SBPs), are "intensified versions of LCs" that have become increasingly popular for many colleges and universities to offer to help students smooth the transition from high school to college (Allen & Bir, 2012, p. 521). Students participate in summer courses or other programs before their first semester of general enrollment (Mayhew et al., 2016). SBPs have the unique twofold goal of both academically and socially preparing students for college life (Cabrera et al., 2013). Common components of summer bridge programs include completion of college coursework, exposure to campus resources, orienting students to campus culture, familiarizing students with college life, review of academic success skills, and the opportunity to form a community with peers, faculty, and staff (Cabrera et al., 2013; Kodama, Han, Moss, Myers, & Farruggia, 2016; Walpole et al., 2008).

While SBPs are widely recognized as an important program for universities to implement (Tinto, 2016), there is not a consensus as to what bridge programs should look like or how they should be structured (Kodama et al., 2016). For this reason, programs often differ wildly from institution to institution (Kodama et al., 2016; Cabrera et al., 2013). Differences between programs can include the target participants, financial cost, program length, and content (Kodama et al., 2016). The fact that programs vary makes it difficult to evaluate programs and draw conclusions. Further, despite the widespread existence of SBPs, researchers have observed a lack of empirical studies on their effectiveness (Strayhorn, 2011; Cabrera et al., 2013; Walpole

et al., 2008; Shapiro et al., 2016). Researchers have been critical of studies that measured the impact of bridge programs by relying solely or partially on one-time satisfaction surveys or self-reported "feeling surveys" of participants only (Cabrera et al., 2013). Further, much of the research on summer bridge programs was conducted without using a control group, a fact that some researchers have used to call into question whether positive outcomes, including retention, can be attributed to the bridge programs (Allen & Bir, 2012; Walpole et al., 2008; Kezar, 2000; Evans, 1999; Logan et al., 2000).

Two of the more stringent empirical studies of SBPs highlight the mixed and often conflicting results that have been found in many studies of bridge programs. Murphy, Gaughan, Hume, and Moore (2010) conducted a quasi-experimental study that examined the effects of a five-week summer bridge program at a selective technical university. The intervention group included 770 freshmen who chose to participate in the bridge program. The comparison group included 1,452 students who elected not to participate. Findings showed that completion rates were significantly higher for students in the intervention group as compared to the comparison group (70% to 67%, respectively) (Murphy et al., 2010). However, Barnett et al. (2012) conducted an empirical study of summer bridge programs at two non-selective four-year institutions and six two-year colleges in Texas. The SBP included developmental course work, transition assistance, and academic support, but the long-term impacts were insignificant in terms of institutional persistence, the number of credits attempted, or the number of credits earned (Barnett et al., 2012).

The majority of studies evaluating SBPs have focused on single institutions with inconsistent and mixed results (Walpole et al., 2008; Cabrera et al., 2013). While it is true that studies focusing on a single institution are limited and cannot be claimed as representative of all

summer bridge programs across the country, researchers have maintained single institution studies as valuable and appropriate since context is important and SBPs differ from institution to institution (Walpole et al., 2008). Some studies have shown that students who participated in SBPs were more confident about what to expect in college, how to navigate the university system, and felt a stronger sense of belonging to the institution (Strayhorn, 2011; Thayer, 2000). While positive effects of SBPs on retention were observed in some cases (Cabrera et al., 2013; Thayer, 2000; Ackermann, 1991; Kodama et al., 2016), other studies have shown little to no impact (Walpole et al., 2008; Barnett et al., 2012).

Cabrera, Miner, and Milem (2013) examined the New Start Summer Program, a voluntary six-week SBP program that is available to all incoming first-year, full-time students at the University of Arizona. Using data from the Office of Research Planning and Support, this study looked at the impact of New Start on first-year retention and first-year GPA of participants relative to non-participants with similar demographic backgrounds, including gender, race/ethnicity, and Pell eligibility. After controlling for student background characteristics and precollege academic variables in the regression model, OIRPS data showed that participation in NSSP had a positive impact on first-year GPA and retention into their second year. Other single-institution studies did not find a positive relationship between SBPs and increased student success outcomes. In another study, Walpole et al. (2008) examined SBP participants and a control group of students over a two-year period at a four-year, public, predominantly White institution. With regard to retention, there was no difference in the freshman-to-sophomore retention rate (both 81%), and the freshman-to-junior rate was only slightly higher, but not significantly so (72% to 69%, respectively) (Walpole et al., 2008). Findings also showed that summer bridge students earned fewer hours than the control group students, which meant that

they progressed through the institution at a slower pace than their non-bridge peers (Walpole et al., 2008). The researchers also found no significant difference in the number of credits attempted or grade point average (GPA) between the two groups. The researchers noted the lack of significant effect on GPA "may be due to the relatively short duration of most bridge programs, which are typically only several weeks during the summer prior to the first year of college and, thus, may be inadequate to prepare some students for the rigors of college work" (Walpole et al., 2008, p. 14-15). Wolf-Wendel, Tuttle, and Keller-Wolff (1999) looked at the University of Kansas's KU Freshman Summer Institute, a program established in 1995 to assist students with the transition to college. The researchers examined the early years of the program (1995-1997) and found that participation in Freshman Summer Institute did not have a statistically significant impact on GPA or retention rates (Wolf-Wendel et al., 1999). However, self-efficacy results, while not significant for all participants, were statistically significant for students with low academic preparation.

Regarding completion rates, although SBPs were designed to improve the transition of students into college and, ostensibly, graduation rates, few studies have documented the long-term effects of SBPs using completion rates as an outcome (Kodama et al., 2016; Douglas & Attewell, 2014; Murphy et al., 2010). Douglas and Attewell (2014) analyzed transcript data from the National Center for Education Statistics (NCES) for students from community college or non-selective four year-institutions over the six-year period of 2004 to 2009. The researchers also examined student data from a multi-campus community college from 2010 to 2012. The results from the transcript data showed that students who attended a summer bridge program were 10% more likely to graduate within ten years. Further, the results showed that summer bridge programs had the largest impact on first-generation students, students with lower high

school grades, and Black/African American and Hispanic students. The community college data found that bridge students were more likely to enroll for their second year than non-bridge participants were. The bridge students also progressed toward their degree at a faster rate in that they attempted more credits, earned more credits, and passed a larger proportion of classes.

Wachen, Pretlow, and Dixon (2016) utilized propensity score analysis, linear regression, and logistic regression to examine the impact of five summer bridge programs in the University of North Carolina system from 2008 to 2014. The researchers found a positive association between summer bridge participation and retention to the second and third year (Wachen et al., 2016). Further, the study's findings also indicated that summer bridge participants were more likely to graduate within four years (Wachen et al., 2016). According to the researchers, "the higher graduation rate suggests that students in the summer bridge program benefit from the 'fast start' that they gain from the college credits earned as part of the summer program" (Wachen et al., 2016, p. 18). While these studies are promising, further research is needed to address the impact of SBPs on successful degree completion.

Within Carnegie Project on the Education Doctorate (CPED) First Principle

The CPED Professional doctorate in education "is framed around questions of equity, ethics, and social justice to bring about solutions to complex problems of practice" ("About Us", CPED Initiative, n.d.). The student populations served by SBPs vary greatly from program to program. Historically, universities implemented SBPs to support underprepared or at-risk student populations, including minority, low-income, or first generation students. SBPs have shown evidence of being particularly successful at improving academic outcomes among low-income, underrepresented, and underprepared populations (Allen & Bir, 2012; Douglas & Attewell, 2014; Kodama et al., 2016; Suzuki et al., 2012; Garcia, 1991).

Ackermann (1991) conducted one of the earliest studies of the impact of SBPs on the academic and social development of underrepresented and low-income first year-students at the University of California, Los Angeles (UCLA). Among the key findings, low-income and underrepresented students who participated in the SBP were 7% more likely to persist into their second year at UCLA than non-participants (97% to 90%, respectively) were. In a study with similar target participants, Allen and Bir (2012) examined Creating Higher Expectations for Educational Readiness (CHEER), a summer bridge learning community for underprepared freshmen students at a medium-sized, public Historically Black College or University (HBCU) in the southeast United States. CHEER participants ended their first year with higher GPAs and were retained at higher levels than their non-CHEER classmates were. Suzuki, Amrein-Beardsley, and Perry (2012) studied Arizona State University's Pathways Summer Bridge Program. Findings showed a positive impact on retention at a rate higher than the campus average (Suzuki et al., 2012). Further, participants reported being more confident in what to expect from college by a statistically significant margin and their sense of belonging was stronger (Suzuki et al., 2012).

Other colleges and universities have developed discipline-specific bridge programs for entering students. Bridge programs for science, technology, engineering, and mathematics (STEM) fields have proven to be popular and highly effective among institutions (Stolle-McAllister, 2011; Lenaburg, Aguirre, Goodchild, & Kuhn, 2012). The University of Mississippi's Grove Scholars Program, an academic program for Ole Miss Opportunity Scholars in STEM majors that started in 2016, runs in partnership with JumpStart as students who participate in Grove Scholars register for JumpStart to cover the cost of tuition, housing, meals,

and books. Preliminary numbers indicate that 15 Grove Scholars participated in JumpStart in 2016.

Preliminary statistics regarding participation in UM's JumpStart program raise questions of equity, ethics, and social justice with regard to the accessibility of the JumpStart program to minority students. JumpStart is open to all entering freshmen, but it is my perception that minority and/or other at-risk student populations do not participate in JumpStart as frequently as White students do. Therefore, it is my perception that minority students do not have equitable access to this bridge program. Preliminary enrollment data from the Office of Pre-College Programs revealed that the White, non-Hispanic student population has made up the largest majority of JumpStart participants in each of the past three years (see Table 4). Black/African American students trail significantly behind in terms of JumpStart participation. However, in two of the last three years, the percentage of Black/African American students who have participated in JumpStart is equal to or higher than the percentage of Black/African American students in that year's overall freshman cohort (M. DeLoach, personal communications, January 23, 2018). This study will further examine overall trends in JumpStart participation by ethnicity for the 2013-2016 JumpStart cohorts.

Table 4. *Preliminary JumpStart Demographic Data, 2015-2017.*

	2015			2016			2017		
	n	% JS	% UM	n	% JS	% UM	n	% JS	% UM
Asian	6			3			4		
Asian and European	2			0			0		
Black and Asian	1			0			0		
Black, Non-Hispanic	31	11.4%	9.8%	25	10.8%	11.1%	24	14.1%	11.4%
Hispanic	3			6			3		
Native American	3			1			2		
White, Hispanic	1			1			1		
White, non-Hispanic	217			189			135		
Unknown	7			7			4		
TOTAL	272			232			170		

It appears probable that many minority students enter the JumpStart program through participation in other UM program interventions like Grove Scholars or FASTrack. Therefore, questions regarding barriers to JumpStart participation, including recruitment, cost, a lack of awareness of the program, or other factors, still exist. The literature has shown summer bridge programs to be impactful for underprepared or underrepresented populations (Ackermann, 1991; Garcia, 1991; Suzuki et al., 2012; Walpole et al., 2008). Thus, it could be that these populations at UM could benefit more from JumpStart than other groups of students if barriers to participation could be removed.

METHODOLOGY

The purpose of this study is to develop a descriptive profile of prior JumpStart participants and to evaluate JumpStart's effectiveness as it relates to student success outcomes, including institutional retention and degree completion. UM, like many institutions, has not routinely evaluated JumpStart to assess its effectiveness at the program level. At present, on average fewer than 7% of UM incoming freshmen have participated in JumpStart each year. Therefore, JumpStart could be an existing program to be expanded, modified, or tailored to boost student outcomes, particularly for specific demographics of students (Douglas & Attewell, 2014, p. 88). Findings will be shared with Pre-College Programs staff, the Director of Outreach, and the Office of the Provost to recommend program changes, improve recruiting, and direct resources, with the ultimate goal of improving the University's retention and completion efforts. Although one should be careful about drawing inferences from a study conducted at a single institution, the context of individual summer bridge programs is important. Evaluation of JumpStart is necessary to evaluate its program effectiveness.

Preliminary Research/Inquiry Questions and Hypotheses

JumpStart institutional retention and completion data has not been consistently tracked from year to year, but limited descriptive retention data from 2011 and 2012 JumpStart participants indicated that full-time new freshmen that were enrolled in JumpStart had a higher year two retention rate on average that those new freshmen that did not enroll in JumpStart (see

Table 5) (Gregory, 2014). The trend held true for third year retention (Gregory, 2014). Only averages were examined; further statistical analysis was not conducted.

Table 5. *Year Two and Year Three Retention Rates, JumpStart Participants, 2011 and 2012.*

	Year Two	Year Three
JumpStart Participant	85.3%	72.8%
Non-Participant	83.0%	70.8%
Difference	2.3%	2.0%

Research Questions. This study seeks to address the following research questions related to JumpStart and student success:

1. What is the descriptive profile of JumpStart participants from the 2013-2016 freshman cohorts, including:
    a. Gender
    b. Residency
    c. Ethnicity
    d. Average High School Core GPA
    e. Average ACT Composite score
2. Is there a significant difference in the average GPA of JumpStart participants compared to non-JumpStart participants for the following periods:
    a. First semester GPA
    b. End of first year GPA
3. Are JumpStart participants more likely to be retained than non-JumpStart students for the following periods:
    a. First-to-second semester retention
    b. Year two retention
    c. Year three retention
    d. Four-year graduation

Hypotheses. The hypotheses for this study were informed by components of Tinto's longitudinal model of student departure. This theory suggests that interventions like summer bridge programs, which aim to increase students' academic and social integration into the

campus community as well as provide access to college-level coursework, should lead to positive impacts on student success, including related to retention and degree completion.

1. Null Hypothesis 1: There is no significant difference in the average first-semester GPA of JumpStart participants compared to non-JumpStart participants.

   Alternative Hypothesis 1: There is a significant difference in the average first-semester GPA of JumpStart participants compared to non-JumpStart participants.
2. Null Hypothesis 2: There is no significant difference in the average end-of-first-year GPA of JumpStart participants compared to non-JumpStart participants.

   Alternative Hypothesis 2: There is a significant difference in the average end-of-first-year GPA of JumpStart participants compared to non-JumpStart participants.
3. Null Hypothesis 3: JumpStart participants are not more likely to be retained to from first-to-second semester than non-JumpStart participants.

   Alternative Hypothesis 3: JumpStart participants are more likely to be retained from first-to-second semester than non-JumpStart participants.
4. Null Hypothesis 4: JumpStart participants are not more likely to be retained to year two than non-JumpStart participants.

   Alternative Hypothesis 4: JumpStart participants are more likely to be retained to year two than non-JumpStart participants.
5. Null Hypothesis 5: JumpStart participants are not more likely to be retained to year three than non-JumpStart participants.

   Alternative Hypothesis 5: JumpStart participants are more likely to be retained to year three than non-JumpStart participants.

6. Null Hypothesis 6: JumpStart participants are not more likely to graduate in four years than non-JumpStart participants.

   Alternative Hypothesis 6: JumpStart participants are more likely to graduate in four years than non-JumpStart participants.

Data Sources Available for Exploration of the Research Questions and Hypotheses

The sample for this study included JumpStart participants and non-participants from the 2013-2016 freshman cohorts. Permission was requested from the University of Mississippi's Institutional Review Board (IRB) to access UM data pertaining to JumpStart participation, background variables, and precollege academic variables. Permission was requested from the UM Office of the Registrar. The Director of Pre-College Programs provided UM's Office of Institutional Research, Effectiveness, and Planning (IREP) and the Office of the Registrar the JumpStart participant lists for the identified freshman cohorts. For purposes of statistical analysis, available data from the 2013 -2016 cohorts was used for the dependent variable of interest. For example, for first-semester GPA, first-to-second semester retention, end of first year GPA, 2013 to 2016 data was used. For four-year graduation, 2013 data was used. Background variables (gender, race, resident status) and precollege academic variables (high school core GPA and ACT composite score) were included. These variables are key predictors for retention (Tinto, 1993; Tinto, 2012; Delaney, 2008). Further, Astin's (1993) Input – Environment – Output (I-E-O) model makes the argument that "one needs information about the characteristics of incoming students (inputs) in order to evaluate the impact of education programs and experiences (environment) on outcomes" like returning to the university or graduation status (Delaney, 2008, p. 60).

Proposed Methods for Data Analysis

Researchers use correlational research design to describe the relationship between two or more variables (Creswell, 2015). Prediction design is a type of correlational research design. Creswell states, "In a prediction design, researchers seek to anticipate outcomes by using certain variables as predictors" (Creswell, 2015, p. 341). This is a correlational design study as it seeks to predict the student success outcomes based on JumpStart participation. The predictor variable, or "the variable used to make a forecast about an outcome" (p. 341), is participation in JumpStart along with other background variables. The criterion variables, or "the outcomes being predicted" (p. 341) are first semester GPA, first-to-second semester retention, end of first-year GPA, year two retention, year three retention, and four-year graduation.

Preliminary analysis included developing a descriptive profile of JumpStart participants from 2013 to 2016, including gender, ethnicity, resident status, high school core GPA, and ACT composite score. This profile is beneficial in order to gain an understanding of the population of students previously served by JumpStart and to observe any differences and/or similarities to the overall freshman cohorts. The profile can be used to make decisions regarding recruitment, marketing, and other program decisions. Analysis of the data was conducted using SPSS version 25. To address this study's research questions regarding GPA, independent samples t-tests were utilized to assess differences in the dependent variable GPA. Multiple logistic regression was used to address the research questions related to retention and four-year graduation. The primary variable of interest is participation in JumpStart. Background variables include gender, race, and resident status. Precollege academic variables included in the model include high school core GPA and ACT composite score.

SUMMARY OF THE MANUSCRIPT

American colleges and universities have implemented many programs and student support services designed to improve institutional retention and timely degree attainment. One popular intervention, grounded in Tinto's longitudinal model of institutional departure, is summer bridge programs. Tinto's model helps administrators to understand the interactions between the academic and social integration into the university. The primary goal of SBPs is to assist students with the transition from high school to college and provide them with both academic and social tools needed to succeed in college prior to beginning their first year (Allen & Bir, 2012). Despite the widespread existence of SBPs on university campuses, studies have shown mixed results about the impact of participation on student success outcomes like GPA, retention, and completion (Sablan, 2014; Walpole et al., 2008; Cabrera et al., 2013). JumpStart is a summer bridge program operated by the Division of Outreach and Continuing Education at the University of Mississippi. The program has not undergone regular evaluation since its inception. This study seeks to contribute to the body of existing literature by evaluating the effectiveness of the UM's JumpStart Summer Bridge Program and its impact on student success outcomes, including GPA, institutional retention, and degree completion, to establish concrete actionable data for program staff and university administrators. Manuscript two will expand on the researcher's methods of analysis and discuss quantitative findings from this study.

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MANUSCRIPT II: DATA INTERPREATION

SUMMARY OF THE PROBLEM OF PRACTICE

Despite the fact that college enrollment numbers are on the rise, American colleges and universities continue to face questions surrounding degree attainment. The most recent National Student Clearinghouse Signature Report indicates the six-year completion rate of first-time, degree-seeking students who entered any postsecondary institution in Fall 2011 was 56.9% (Shapiro et al., 2017). For four-year public institutions, the six-year completion rate was 64.7% (Shapiro et al., 2017). National statistics also continue to shed light on troubling disparities in degree completion outcomes by race or ethnicity. Minority students have historically fallen below the national average in completion rates. Among students who started at a four-year public institution in Fall 2011, Black/African American students had the lowest six-year completion rate at 46% (Shapiro et al., 2017). Hispanic students completed at a rate of 55.7% (Shapiro et al, 2017). In contrast, 71.1% of White students and 75.8% of Asian students completed within the same six-year period (Shapiro et al., 2017).

Colleges and universities have implemented many programs and student support services to address retention and completion (Tinto, 2012). With their genesis stemming largely from Tinto's (1987) longitudinal model of institutional departure, summer bridge programs (SBPs) have been one popular programmatic intervention offered at colleges and universities (Allen & Bir, 2012; Sablan, 2014). The primary goal of SBP's is to assist students with the transition from high school to college and provide them with academic and social tools needed to succeed in college prior to beginning their undergraduate studies (Allen & Bir, 2012; Garcia & Paz, 2009).

Students participate in SBPs during the summer prior to their critical first year of college (Walpole, Simmerman, Mack, Mills, Scales, & Albano, 2008; Mayhew et al., 2016). Tinto (1987) has referred to this as a critical time when students begin to break old forms of association while successfully integrating into the intellectual and social aspects of college life. SBPs have the unique twofold goal of both academically and socially preparing students for college life (Cabrera, Miner, & Milem, 2013; McCurrie, 2009). Therefore, the so-called "bridge" often consists of both academic and social components, "often with emphases that reflect the overall mission of the institution" (McCurrie, 2009, p. 28). Despite the popularity and spread of bridge programs at colleges and universities around the country, relatively little is known about their effectiveness. Studies have shown mixed results in terms of SBP participation and its relationship between retention, completion, and grade point averages (GPA) (Walpole et al., 2008; Ackermann, 1991; Evans, 1999; Logan et al., 2000; Wolf-Wendel, Tuttle, & Keller-Wolff, 1999).

Site Selection

The University of Mississippi (UM) is the setting for this study. UM is a large, coeducational, public, Research I university in a small-town located in the Southeastern United States. The total student enrollment for the 2016-2017 academic year was recorded at 24,250 students for all campuses, including the UM Medical Center ("Fact & Statistics", 2018). Undergraduate enrollment was 18,517 undergraduate degree-seeking students in the Fall of 2016 ("Overall Enrollment", 2018). Of the 18,517 students, 3,895 were first-time, full-time freshmen. The program under review in the current study is JumpStart, a residential summer bridge program at UM started in 2011. UM has posted impressive retention rates in recent years. In 2014, UM achieved its highest fall-to-fall retention rate ever, with 86.5% returning for their sophomore year ("Retention Trends", 2018). Despite its successful retention numbers, UM's

completion rates are below the national average for students entering four-year public universities. According to UM institutional data, 38.6% of the 2011 cohort of first-time freshmen graduated within four years ("Graduation Trends", 2018). The six-year graduation rate rose to 60.1%, a percentage still below the national average for four-year public institutions. A deeper examination of completion rates by race and ethnicity reveal troubling gaps between races. Of the 2011 cohort, 42% of White students graduated within four years, compared with 23.7% of Black students. The gap between races continued to widen even with more time to complete their degree. The six-year graduation rate showed a similar gap: 64.2% of White students graduated within six years, compared with 42.4% of Black/African American students ("Graduation Trends", 2018).

JumpStart is open to all entering first-time, full-time freshmen at UM regardless of academic ability or student background characteristics. The program is promoted as a way for incoming students to get a "jumpstart" on their college experience and "give students the tools they need to make their next four years a success" ("JumpStart", Pre-College, 2017, para. 2). Participants have the opportunity to earn up to six credit hours per session they register to attend of three available sessions. In addition to earning academic credits, JumpStart students participate in SkillStart, a series of programming designed to teach students study, time management, leadership, and team-building skills. Other features of JumpStart include the requirement to attend proctored study hall, participate in mandatory orientation, and having a JumpStart peer leader to mentor them during the summer.

Purpose

This study seeks to contribute to the body of existing literature by evaluating the effectiveness of the University of Mississippi's JumpStart Summer Bridge Program and its impact on student success outcomes, including GPA, institutional retention, and degree

completion, to establish concrete actionable data for university administrators. As scholar-practitioner, I serve as Associate Director of the Division of Outreach and Continuing Education at the University of Mississippi. Given the increased importance of accountability, assessment, and effectiveness in higher education today, and particularly in light of budget constraints, the ability to demonstrate evidence of program effectiveness is critical. Bridge programs are already a well-established programmatic intervention in higher education; however, research has shown that institutions are not routinely evaluating summer bridge programs to assess their effectiveness and determine whether the programs are meeting their intended outcomes (Strayhorn, 2011; Cabrera et al., 2013). Furthermore, due to conflicting results of prior studies, criticism has mounted that there is a need for more research on summer bridge programs (Walpole et al., 2008; Allen & Bir, 2012).

My intent for this study is to provide actionable information to assist university administrators in making the best use of university resources by understanding the effects of JumpStart participation on student success metrics. While studies have examined bridge programs around the country, the evaluation of individual summer bridge programs is important because programs differ from institution to institution (Cabrera et al., 2013). Student background characteristics like race, gender, and resident status, as well as level of academic preparedness as determined by pre-college academic variables will also be of particular interest in this study.

This study sought to address the following research questions:

1. What is the descriptive profile of JumpStart participants from the 2013-2016 freshman cohorts, including:
    a. Gender
    b. Residency

c. Ethnicity
d. Average High School Core GPA
e. Average ACT Composite score

2. Is there a significant difference in the average GPA of JumpStart participants compared to non-participants for the following periods:

    a. First semester GPA
    b. End of first year GPA

3. Are JumpStart participants more likely to be retained than non-participants for the following periods:

    a. First-to-second semester retention
    b. Year two retention
    c. Year three retention
    d. Four-year graduation

DATA OVERVIEW

Study Design and Method

This study utilized a correlational research design. Correlational research provides an opportunity to predict and explain the relationship among variables (Creswell, 2008). Correlational research investigates the existence and the degree of the relationship between two or more quantitative variables (Creswell, 2008). If two variables are highly related, scores on one variable could be used to predict those on the other variable (Creswell, 2008). This study examined the relationship between participation in the JumpStart Summer Bridge Program and measurable student success indicators such as GPA, institutional retention, and graduation.

Data was retrieved from UM's Office of Institutional Research Effectiveness and Planning (IREP), Office of the Registrar, and the Office of Pre-College Programs JumpStart database. IREP provided the data file, which included cohort year, first-semester grade point average, first-year grade point average, retention status, completion status, and JumpStart participation, demographic information, and pre-college academic performance.

Description of Data Measures

Independent/Predictor Variables. Independent variables were selected for the study based on the availability and accessibility of data from records related to Tinto's longitudinal model of institutional departure (Tinto, 1993). Independent (predictor) student background, precollege, and college variables were chosen for this study. Student background data included

gender, *ethnicity*, and *residency status*. *Gender* was a dichotomous variable coded as 0 = female; 1 = male. Census categories were used to categorize a student's *ethnicity* ("3.14 Racial and Ethnic Identity", 2010). Ethnicity was represented by two dichotomous dummy variables: Black/African American and other ethnic minorities. White students served as the reference group. Therefore, Black/African American was coded as 0 = White and Other Minorities/Unknown; 1 = Black/African American and Other Ethnic Minorities/Unknown were coded as 0 = White and Black/African American; 1 = Other Minorities/Unknown. *Residency* status was a dichotomous variable coded as 0 = non-resident; 1 = Mississippi resident. Precollege academic performance variables included *high school core GPA* and *composite ACT score*. *High school core GPA* was unweighted and on a 4.0 scale. *ACT composite score* was the highest score provided on the composite scale if students took the test more than once. SAT scores were converted to ACT using the "ACT/SAT Conversion Table" provided by ACT. Finally, JumpStart participation was the primary college variable that served as the focus of this study. *JumpStart participation* was operationalized as whether or not students participated in the JumpStart Summer Bridge program. JumpStart participation was a dichotomous variable coded as yes (participant) = 1 and no (non-participant) = 0.

In addition to student background characteristics and precollege academic performance variables, the study also focused on college outcomes.

Dependent Variables/ Outcome Measures. This research has three categories of dependent (criterion) variables: GPA, retention, and graduation. The research focused on the following specific college outcomes as the dependent variables of interest: First-semester GPA, First-year GPA, Spring Semester retention, Year Two retention, Year Three retention, and Four-Year graduation. *First-semester GPA* was calculated based on a 4.0 scale from grades earned in

all credit bearing courses in the first semester of college. *First-year GPA* was calculated based on a 4.0 scale from grades earned in all credit bearing courses in the first-year of college. Retention was measured by whether freshmen cohort members persisted into three points in time: *Spring Semester*, *Year Two*, and *Year Three*. For spring retention, a student who studied full-time in the fall semester and remained in the university the next spring semester is considered to be retained (retained =1). Conversely, a student who studied full-time in the fall and was not enrolled in the university the subsequent spring semester is considered not to have been retained (not retained =0). For Year Two retention and Year Three retention, a student who studies full-time in the fall semester and remained in the university the fall of their second year/third year is considered to be retained (retained = 1). Conversely, a student who studied full time in the fall and was not enrolled in the university the fall of their second year/third year is considered not to have been retained (not retained =0). Therefore, in the logistic regression models for retention, the value of the dependent variable for Y= 0 for not retained and Y=1 for retained. *Four-year graduation* is measured by whether the student persisted to graduation in four years. In the logistic regression model for graduation, the value of the dependent variable was Y=0 for not graduated within four years and Y = 1 for graduated within four years.

Sample and Data Source

The University of Mississippi's Institutional Review Board (IRB) granted permission to access UM data pertaining to JumpStart participation, student background variables, and precollege academic variables. Permission was also granted from the UM Office of the Registrar to access college outcomes. The Office of Pre-College Programs provided the Office of Institutional Research, Effectiveness, and Planning (IREP) with JumpStart participant lists for the 2013 to 2016 freshman cohorts. IREP provided data on JumpStart participants and non-participants, including student background characteristics (e.g., ethnicity, gender, residency),

precollege academic variables (e.g., ACT composite score, high school GPA), and college outcomes (e.g., first-year GPA, end-of-first year GPA, retention, and completion records). IREP also provided information about other special cohort statuses.

Description of the Sample

The target population for this study were students who entered UM in the Fall 2013, Fall 2014, Fall 2015, and Fall 2016 freshmen cohorts. The population of students for the study was identified with a review of the IREP and JumpStart database. Across four years, the total number of freshman students from the combined cohorts was 15,301. In an effort to make the sample more generalizable to the traditional, first-year college student population, 176 part-time students were removed from the analysis population (Allen & Bir, 2012). Fifteen students were also excluded from analysis due to death. Therefore, the final sample for this study consisted of 15,110 first-time, full-time students admitted to UM in the Fall 2013, Fall 2014, Fall 2015, and Fall 2016 freshmen cohorts. JumpStart Summer Bridge Program participants for academic years 2013-2016 were selected for the study (n=835). Non-summer bridge participants were students who entered UM as first-time, full-time students for the fall semester and did not participate in the JumpStart Summer Bridge Program (n=14,275). JumpStart participants were compared to non-participants to determine if attending JumpStart affected academic performance and retention.

Limitations, Delimitations, and Assumptions

This study should be viewed with several key limitations. First, this study focuses on a single institution; therefore, the results are not representative of the diversity of summer bridge programs across the country. Despite this limitation, local context is critical to gaining insight into the impact of programs like JumpStart, which makes a single institution focus appropriate in this case (Cabrera et al., 2013). While these findings are certainly useful and important for UM

and JumpStart, caution must be taken when generalizing to other summer bridge programs around the country. A second limitation is that this study did not employ experimental or quasi-experimental methods to assign participants and non-participants randomly or otherwise utilize a control group. As such, conclusive evidence of causal impact of the JumpStart bridge program cannot be claimed. Although the study's outcomes cannot be attributed solely to JumpStart, this data is still useful in providing important program context, associations, and comparisons among groups. Another key limitation is that this study provides an incomplete view of the impact of JumpStart participation because it does not examine JumpStart from the lived student perspective (Astin, 1993; McCurrie, 2011; Stolle-McAllister, 2011). Future studies could do this quantitatively through survey and/or qualitatively through focus groups or interviews. Finally, JumpStart is a voluntary program at UM. Others have noted that self-selection plays a key role in understanding the impact of learning communities (Stassen, 2003; Allen & Bir, 2012). Future studies could investigate the effect of these and other variables, along with self-selection, to more accurately evaluate the effect of JumpStart on retention, completion, and academic success.

This study was delimited to the student background variables of gender, race, and resident status, the pre-college academic variables of high school GPA and ACT composite score, and college success outcomes of first-semester GPA, first-year GPA, retention status, and four-year graduation. Additional variables could have been considered in a study like this one, including, but not limited to, level of parental education, socioeconomic status, motivation, self-regulation, and self-reliance. These variables were not considered in this study. It also did not account for, in all cases, differences between groups, within groups, or interactions between groups. Further, this study was interested in examining, on the aggregate, the impact of JumpStart on student success outcomes. The study did not account for other academic programs

or support programs available to students (e.g., Honors College, Croft Institute, Student Athlete, Provost Scholar, etc.), which may have an impact on a student's ability to integrate into campus life. It is noted in the study the number of JumpStart participants who have other statuses and are members of other special cohort groups. While this study does not account for other interventions or interactions, it could be an option to consider for future research. Finally, it was assumed that the data collected from IREP and the Registrar were accurate and complete.

These factors should be taken into consideration when generalizing results; however, providing an institution-level view of the academic success of JumpStart participants and non-participants affords researchers and practitioners the opportunity to become more knowledgeable about a group that has not been routinely evaluated at the program level at UM.

PRESENTATION OF FINDINGS

Plan of Analysis

Research question one sought to formulate a descriptive profile of students who participate in JumpStart. To address this research question, preliminary analyses for the study included (a) descriptive analyses, (b) correlational analyses, and (c) t-test analyses to examine possible differences between JumpStart participants and non-participants on the study variables. To address the study's other research questions, a series of t-tests were conducted to examine differences in first-semester GPA and first-year GPA for JumpStart participants and non-participants. T-tests were also conducted to examine differences in retention and completion among JumpStart participants and non-participants. Finally, logistic regression was used for the analyses of predictors of retention and four-year graduation. The primary variable of interest was participation in JumpStart. Background variables included in each model were gender, ethnicity, and residency. Precollege academic variables included in the model included high school GPA and ACT composite. All analyses were conducted in SPSS version 25.

Research Question One

The primary purpose of this study was to measure the impact of JumpStart participation on student success outcomes. Research question one sought to formulate a descriptive profile of students who participate in the JumpStart summer bridge program. Table 1 presents the size of the JumpStart summer bridge program for the 2013-2016 freshman cohorts.

Table 1. *JumpStart Program Size by Year, 2013 – 2016 Freshman Cohorts.*

	2013	2014	2015	2016	Total
JumpStart (n)	177	208	245	205	835
Non-JumpStart (n)	3,384	3,547	3,654	3,690	14,275

**First-time, full-time students*

The first stage involved descriptive analysis of data, including frequencies and cross tabulations exploring bridge students' background characteristics and pre-college academic performance variables. Table 2 presents descriptive statistics and cross-tabulations of the demographic background variables and pre-college academic performance variables of JumpStart participants from the sample combined Fall 2013-2016 freshman cohorts.

Table 2. *Profile of JumpStart Participants, 2013 – 2016 Freshman Cohorts, n=835.*

Variable	F	%
Gender		
Male	441	52.8%
Female	394	47.2%
Ethnicity		
White	661	79.2%
Black/African American	115	13.8%
Hispanic	26	3.1%
Asian/Pacific	7	0.8%
American Indian/Alaskan	4	0.5%
Native Hawaiian/Pacific Islander	2	0.2%
Non-US Citizen	2	0.2%
Two or More Races	18	2.2%
Unknown	0	0.00%
Residency		
Mississippi Resident	267	32.0%
Non-Resident	568	68.0%
High School GPA		
4.00 and above	118	14.1%
3.75-3.99	104	12.5%
3.50-3.74	140	16.8%
3.25-3.49	164	19.6%
3.00-3.24	140	16.8%
2.75-2.99	81	9.7%
2.50-2.74	51	6.1%
2.25-2.49	28	3.4%
2.00-2.24	7	0.8%
1.75-1.99	1	0.1%
1.74 and below	0	0.00%
Missing GPA	1	0.1%
ACT Composite Score		
32 or above	44	5.3%
27-31	174	20.8%
23-26	283	33.9%
17-22	325	38.9%
13-16	8	1.0%
12 and below	0	0.00%
Missing ACT	1	0.1%
Total number of students	835	

Note: First-time, full-time students

Of the 835 students in the JumpStart program, 441 were male (52.8%), 394 were female (47.2%). With regard to ethnicity, 79.2% (n = 661) identified themselves as White, 13.8%

(n=115) as Black/African American, with all other ethnic minorities representing 7.1% (n = 59) of the JumpStart sample. A majority of JumpStart students were non-residents (68.0% or n = 568). Participants' average high school GPA was 3.38 and average ACT score was 24.08.

UM offers students the opportunity to participate in other academic programs, support programs, or classifications other than JumpStart (e.g. Honors College, Croft Institute, Student Athlete, etc.). Table 3 presents frequencies and cross-tabulations of the number of JumpStart participants and non-participants for other special statuses. No interactions were included in this study; however, it could be a question to consider for future research.

Table 3. *Other Special Statuses of JumpStart Participants and Non-participants, 2013-2016 Freshman Cohorts.*

Other Special Status	JumpStart Participants n=835	Non-Participants n=14,275
Chinese Flagship	19	50
Center for Manufacturing Excellence	4	149
Croft Institute	32	198
Grove Scholars	15	1
Honors College	64	1511
Lott Institute	7	172
MS Excellence in Teaching Program	2	43
Early Entry Pharmacy	3	291
Provost Scholar	137	2870
Student Athlete	3	300
Veteran Status	0	15
Yellow Ribbon Scholarship	2	20

Note: First-time, full-time students

Next, descriptive statistics and cross-tabulations of demographic background variables were used to examine how JumpStart participants compared to non-participants. Table 4 summarizes the comparisons between JumpStart participants and non-participants on student background variables.

Table 4. *Descriptive Statistics of Background Variables of JumpStart Participants and Non-Participants, 2013-2016 Freshman Cohorts.*

	JumpStart Participants n=835	Non-Participants n=14,275
Male (%)	441 (52.8%)	6,078 (42.6%)
Female (%)	394 (47.2%)	8,197 (57.4%)
Ethnicity: White (%)	661 (79.2%)	11,370 (79.6%)
Ethnicity: Black	115 (13.8%)	1,636 (11.5%)
Ethnicity: Other (%)	59 (7.1%)	1,270 (8.9%)
Residency: MS (%)	267 (32.0%)	6,340 (44.4%)
Residency: Non (%)	568 (68.0%)	7,935 (55.6%)

Note: First-time, full-time students

JumpStart participants include higher percentages of males and non-residents than the non-participants in the overall freshman cohort. The ethnicity numbers are comparable.

Group Differences. In addition to descriptive statistics, T-tests were conducted to examine mean differences between JumpStart summer bridge participants and non-participants on pre-college academic variables. Twenty-five cases (.2%) were excluded from analysis due to missing high school GPA. Seventy-nine cases (.5%) were excluded from analysis due to missing ACT score.

The t-test results as well as overall means and standard deviations for study variables are included in Table 5.

Table 5. *t-test Results, Means, and Standard Deviations for Pre-College Background Variables of JumpStart Participants and Non-Participants, 2013-2016 Freshman Cohorts.*

	JumpStart Participants		Non-Participants		
Variable	n	M *(SD)*	n	M *(SD)*	t
High school GPA	834	3.38 (.46579)	14,251	3.53 (.44628)	-9.481*
ACT composite	834	24.08 (3.93923)	14,197	24.67 (4.22451)	-4.129*

Note: First-time, full-time students; 25 cases (0.2% were excluded from GPA due to the absence of a high school GPA. 79 cases (0.5%) were excluded due to the absence of an ACT composite score.
**p<.001*

Overall, the difference in ACT composite and high school GPA were significant at $p < .001$. JumpStart participants had a lower mean high school GPA (3.38) and lower ACT composite (24.09) compared with non-participants, which were significantly higher on both measures. Levene's Test for Equality of Variances was met with regard to high school GPA, but not ACT composite.

This study also focuses on the outcomes of students based on their level of academic preparedness as measured by high school GPA and ACT composite. For regular admission to UM, resident students must have a 3.20 high school GPA or a 2.50 high school GPA and a minimum score of 16 on the composite ACT or a 2.00 GPA and a minimum score of 18 on the composite ACT. This study will look at two ranges of GPAs for each outcome as a measure of level of academic preparedness, specifically above and below 3.20, the level of regular admission to UM. Table 6 contains t-test results, means, and standard deviations for high school GPA broken down by GPA range.

Table 6. *t-test Results, Means, and Standard Deviations for High School GPA of JumpStart Participants and Non-Participants by GPA Range, 2013-2016 Freshman Cohorts.*

	JumpStart Participants		Non-Participants		t
High School GPA	n	M *(SD)*	n	M *(SD)*	
Above 3.20	549	3.65 (.26618)	10,888	3.73 (.25887)	-6.867*
Below 3.20	278	2.84 (.26639)	3,264	2.87 (.26121)	-1.645

Note: First-time, full-time students; 25 cases (0.2% were excluded from GPA due to the absence of a high school GPA. 79 cases (0.5%) were excluded due to the absence of an ACT composite score.
**p<.001*

Levene's Test for Equality of Variances was met for each GPA range. Non-participants (3.73) had a significantly higher mean high school GPA for above 3.20 than JumpStart participants (3.65). There was not a significant difference between the mean high school GPA for GPAs below 3.20 for JumpStart participants (2.84) and non-participants (2.87).

Finally, Table 7 summarizes the comparisons between JumpStart participants and non-participants on mean high school GPA and ACT composite, including breakdowns by gender, ethnicity, and residency. Black/African American JumpStart participants entered with a higher high school GPA than non-participants.

Table 7. *Comparisons of Means of High School Grade Point Averages and ACT Composite by Groups, 2013-2016 Freshman Cohorts.*

	JumpStart Participants		Non-Participants	
Variable	n	M *(SD)*	n	M *(SD)*
High School GPA				
Overall	834	3.38 (.46579)	14,251	3.53 (.44628)
Gender: Male	440	3.27 (.47087)	6,060	3.43 (.48165)
Gender: Female	394	3.50 (.43095)	8,191	3.60 (.40266)
Ethnicity: White	661	3.35 (.47570)	11,351	3.54 (.44303)
Ethnicity: Black	115	3.51 (.38865)	1,634	3.42 (.45344)
Ethnicity: Other	58	3.40 (.45542)	1,266	3.55 (.44686)
Residency: MS	267	3.56 (.43556)	6,328	3.60 (.43329)
Residency: Non	567	3.29 (.45632)	7,923	3.48 (.44926)
ACT Composite				
Overall	834	24.08 (3.939)	14,197	24.67 (4.225)
Gender: Male	441	24.27 (3.864)	6,031	25.07 (4.276)
Gender: Female	393	23.88 (4.017)	8,166	24.37 (4.161)
Ethnicity: White	661	24.60 (3.777)	11,362	25.26 (3.993)
Ethnicity: Black	114	20.75 (3.225)	1,629	20.70 (3.556)
Ethnicity: Other	59	24.78 (3.873)	1,206	24.44 (4.266)
Residency: MS	266	23.62 (4.465)	6,324	24.26 (4.579)
Residency: Non	568	24.30 (3.651)	7,873	25.00 (3.887)

Note: First-time, full-time students; 25 cases (.2%) were excluded from GPA analysis due to absence of a high school GPA. 79 cases (0.5%) were excluded from ACT analysis due to absence of an ACT composite score.

Correlations Between Study Variables. Correlations between the variables are listed in Table 8. Some of the variables had little if any correlation with the other study variables. For example, JumpStart had little if any correlation with any other variable. Other variables had low (.30 - .50) to moderate (.50 - .70) levels of correlation with each other. High school GPA had moderate levels of correlation with first-year GPA (r = .55) and first-semester GPA (r = .51). There were also moderate levels of correlation between spring retention and year two retention (r

= .56), year two retention and year three retention (r = .67), and year three retention and four-year graduation (r = .51). There was a very high correlation between first-semester GPA and first-year GPA (r = .91).

Table 8. *Correlations between Study Variables.*

Variable	1	2	3	*4*	5	6	7	8	9
1. JumpStart	-								
2. High School GPA	-.077*	-							
3. ACT Composite	-.032*	.473*	-						
4. First-semester GPA	-.074*	.511*	.386*	-					
5. First-year GPA	-.038*	.551*	.439*	.908*	-				
6. Spring Retention	.013	.118*	.090*	.205*	.247*	-			
7. Y2 Retention[a]	-.004	.172*	.124*	.329*	.352*	.562*	-		
8. Y3 Retention[a]	-.006	.233*	.199*	.398*	.427*	.399*	.670*	-	
9. Y4 Graduation[a]	-.014	.351*	.291*	.452*	.496*	.225*	.381*	.514*	-

Note: First-time, full-time students
[a]Y3 correlations from 2013 to 2015 cohort; Y4 graduation from 2013 cohort.
*p < .01

Hypotheses Related to JumpStart Participants and Non-Participants

Due to the timing of students' participation in JumpStart, the researcher was unable to conduct statistical analyses for all hypotheses on all cohorts of students. For purposes of statistical analysis, the researcher utilized the available data from the 2013, 2014, 2015, and 2016 freshmen cohorts for the dependent variable of interest. For example, for first-semester GPA, first-to-second semester retention, first-year GPA, and year two retention, all 2013, 2014, 2015, and 2016 cohort data was included. For year three retention, 2013, 2014, and 2015 cohort data was included. The four-year graduation rate included in the study only includes the 2013 data.

The samples used for statistical analysis of retention to year two, retention to year three, and four-year graduation each excluded students who IREP deemed exempt from retention analysis due to military service. The descriptive statistics of the outcomes in Table 9 specify the cohorts included for each analysis.

Table 9. *Descriptive Comparison of Outcomes.*

	JumpStart Participants		Non-Participants		
	n	M *(SD)*	n	M *(SD)*	Cohorts Included
First-semester GPA	834	2.63 (.95221)	14,222	2.93 (.89190)	2013-2016
First-year GPA	834	2.79 (.76232)	14,229	2.92 (.82692)	2013-2016
Spring Retention	835	.9509 (.21621)	14,275	.9372 (.24255)	2013-2016
Y2 Retention*	834	.8489 (.35834)	14,246	.8546 (.35249)	2013-2016
Y3 Retention**	629	.7472 (.43495)	10,564	.7593 (42754)	2013-2015
Y4 Graduation***	177	.4247 (.49555)	3,381	.4564 (.49817)	2013 only

*Note: First-time, full-time students; *30 cases (0.2%) were excluded listwise due to exemption from retention analysis. **22 cases (0.2%) were excluded listwise due to exemption from retention analysis. *** 3 cases (0.1%) were excluded listwise due to exemption from retention analysis.*

Research Question Two

Research question two addresses whether there is a significant difference in the mean first-semester GPA and first-year GPA of JumpStart participants compared to JumpStart non-participants. To address the research question, a series of independent sample t-tests were conducted to determine whether the two populations have statistically different mean GPAs. Effect size was also calculated where there was a statistically significant difference to determine the practical importance of the effect. The significance level was set at .05. Analysis also included descriptive statistics and t-tests of mean first-semester GPA and first-year GPA broken down by cohort year, high school GPA range, and student background characteristics.

Hypothesis One. Hypothesis one examined whether there is a significant difference in the average first-semester GPA of JumpStart participants compared to non-participants. Hypothesis one is stated in the null form: There is no significant difference in the average first-semester GPA of JumpStart participants compared to non-participants. Fifty-four cases (.3%) were excluded from analysis due to the absence of a first-semester GPA.

Table 10 displays the results of the t-test on first-semester GPA. There was a significant difference between first-semester GPAs for JumpStart participants and non-participants. The null hypothesis was rejected.

Table 10. *t-test Results, Means, and Standard Deviations for First-semester Grade Point Averages of JumpStart Participants and Non-Participants, 2013-2016 Freshman Cohorts.*

							95% CI	
	n	M *(SD)*	t	*df*	Sig.	MD	Lower	Upper
JumpStart	834	2.63 (.95221)	-8.646	920.774	.000	-.29231	-.35867	-.22596
Non-JumpStart	14,122	2.93 (.89190)						

Note: First-time, full-time students; 54 cases (0.3% were excluded listwise due to the absence of a first-semester GPA; p < .001

Levene's test (F = 8.185) was significant (p = .003), suggesting that the assumption of homogeneity of variances was violated. Therefore, statistics were used from the row labelled *Equal variances not assumed*. The independent samples t-test revealed there was a significant difference in the average first-semester GPA of JumpStart participants (M = 2.63, SD =. 95221) and JumpStart non-participants (M = 2.93, SD = .89190). The difference, -.29231, 95% CI [-.35867, -.22596], was significant $t(920.774) = -8.646$, p = .000.

Effect size is "an objective and (usually) standardized measure of the magnitude of the observed effect" (Field, 2013, p. 79). Effect size is important because statistical significance does always inform about the importance of an effect (Field, 2013). Thus, measuring the size on an effect is a way to measure the practical significance of an effect, and it enables comparisons across different studies. Cohen's d is a commonly used effect size, and was used in this study. Cohen's d is expressed formally as:

$$d = \frac{\bar{X}_1 - \bar{X}_2}{s}$$

With regard to the statistical difference between first-semester GPA for JumpStart participants and non-participants there was a small to medium effect size, d = .325186.

Table 11 includes descriptive statistics and t-test results for first-semester GPA for the 2013-2016 overall and by cohort year.

Table 11. *Means, Standard Deviations, and t-test Results for First Semester GPA of JumpStart Participants and Non-Participants by Cohort Year, 2013-2016 Freshman Cohorts.*

	JumpStart Participants		Non-Participants		
First-Semester GPA	n	M (SD)	n	M (SD)	t
2013	177	2.70 (.85887)	3,373	2.87 (.90541)	-2.531*
2014	208	2.64 (.95337)	3,535	2.89 (.90068)	-3.863**
2015	244	2.58 (.98222)	3,639	2.94 (.88439)	-5.605**
2016	205	2.65 (.99350)	3,675	3.00 (.87267)	-5.034**
Overall	834	2.63 (.95221)	14,222	2.93 (.89190)	-8.646**

Note: First-time, full-time students; 54 cases (0.4%) were excluded listwise due to the absence of a first-semester GPA.
**p < .05. ** p < .001*

There was a significant difference in the mean first-semester GPA of JumpStart participants and non-participants for each cohort year.

Table 12 includes descriptive statistics and t-test results for first-semester GPA based upon the students' incoming high school GPA.

Table 12. *Means, Standard Deviations, and t-test Results for First Semester GPA of JumpStart Participants and Non-Participants by High School GPA Range, 2013-2016 Freshman Cohorts.*

	JumpStart Participants		Non-Participants		
First-Semester GPA	n	M (SD)	n	M (SD)	t
Above 3.20	548	2.91 (.84093)	10,857	3.12 (.76946)	-5.844**
Below 3.20	278	2.10 (.93152)	3,245	2.28 (.95392)	-3.055*
Overall	834	2.63 (.95221)	14,222	2.93 (.89190)	-8.646**

Note: First-time, full-time students; 54 cases (.4%) were excluded listwise due to the absence of a first-semester GPA.
**p < .05. ** p < .001*

There was a significant difference in the mean first-semester GPA of JumpStart participants and non-participants with high school GPA's above 3.20 (ES, d = .26055) and below 3.20 (ES, d = 190923).

Further, a series of descriptive means analyses and t-tests were conducted to examine the difference in mean first-semester GPA for JumpStart participants and non-participants by ethnicity, gender, and residency status. Table 13 shows descriptive comparisons and t-tests on

first-semester mean GPA by group. The first-semester mean GPAs were significantly lower for JumpStart participants for every marker except Black/African American students. There was not a significant difference in the first-semester GPA of Black/African American JumpStart participants and non-participants.

Table 13. *Means, Standard Deviations, and t-test Results for First-Semester GPA by Student Background Characteristics, 2013-2016 Freshman Cohorts.*

	JumpStart Participants		Non-Participants		
First-Semester GPA	n	M *(SD)*	n	M *(SD)*	t
Gender: Male	441	2.49 (1.0190)	6,052	2.75 (.97339)	-5.470**
Gender: Female	393	2.80 (.84351)	8,170	3.05 (.80270)	-5.950**
Ethnicity: White	660	2.66 (.95369)	11,335	2.99 (.85835)	-8.689**
Ethnicity: Black	115	2.51 (.81554)	1,627	2.45 (.97249)	.776
Ethnicity: Other	59	2.57 (1.1575)	1,260	2.96 (.89518)	-2.546*
Residency: MS	267	2.74 (.88830)	6,317	2.87 (.95062)	-2.260*
Residency: Non	567	2.58 (.97758)	7,905	2.97 (.83984)	-9.110**
Overall	834	2.63 (.95221)	14,222	2.93 (.89190)	-8.646**

Note: First-time, full-time students; 54 cases (0.4%) were excluded listwise due to absence of a first-semester GPA.
**p < .05. ** p < .001*

Hypothesis Two. Hypothesis two examined whether there is a significant difference in the average first-year GPA of JumpStart participants compared to non-participants. Hypothesis two is stated in the null form: There is no significant difference in the average first-year GPA of JumpStart participants compared to non-participants. Forty-seven cases (0.3%) were excluded from analysis due to the absence of a first-year GPA.

Table 14 displays the results of the t-test on first-year GPA. There was a significant difference between the first-year GPAs for JumpStart participants and non-participants. The null hypothesis was rejected.

Table 14. *t-test Results, Means, and Standard Deviations for First-year Grade Point Averages of JumpStart Participants and Non-Participants, 2013-2016 Freshman Cohorts.*

							95% CI	
	n	M *(SD)*	t	*df*	Sig.	MD	Lower	Upper
JumpStart	832	2.79 (.75808)	-4.904	950.647	.000	-.13329	-.18664	-.07995
Non-JumpStart	14,122	2.92 (.82468)						

Note: First-time, full-time students; 47 cases (0.3%) were excluded listwise due to absence of a first-year GPA. to GPA; p <.001

Levene's test (F = 4.057) was significant (p = .044), suggesting that the assumption of homogeneity of variances was violated. Therefore, statistics were used from the row labelled *Equal variances not assumed*. The independent samples t-test revealed there was a significant difference in the average first-year GPA of JumpStart participants (M = 2.79, SD = .75808) and JumpStart non-participants (M = 2.92, SD = .82468). The difference, -.13329, 95% CI [-.18664, -.07995], was significant *t*(950.647) = -4.904, p=.000. The effect size was small, d = .164125.

Table 15 includes descriptive statistics and t-test analysis for first-year GPA for the 2013-2016 cohorts overall and by cohort year. There was a significant difference in first-year GPA of JumpStart participants and non-participants for the 2015 and 2016 cohorts. There was not a significant difference for the 2013 and 2014 cohorts.

Table 15. *t-test Results, Means, and Standard Deviations of First-Year GPA of JumpStart Participants and Non-Participants by Cohort Year, 2013-2016.*

	Jump Start Participants		Non-Participants		
First-Year GPA	n	M (SD)	n	M (SD)	t
2013	177	2.79 (.71575)	3,375	2.86 (.85110)	-1.061
2014	208	2.78 (.79051)	3,537	2.89 (.82223)	-1.914
2015	244	2.77 (.78089)	3,640	2.94 (.81931)	-3.172*
2016	205	2.81 (.75465)	3,677	2.99 (.81090)	-3.090*
Overall	834	2.79 (.76232)	14,229	2.92 (.82692)	-4.904**

Note: First-time, full-time students; 47 cases (0.3%) were excluded listwise due to absence of a first-year GPA.
**p < .05. ** p < .001*

Table 16 includes descriptive statistics and t-test results for first-year GPA based upon the students' incoming high school GPA.

Table 16. *Means, Standard Deviations, and t-test Results First-Year GPA of JumpStart Participants and Non-Participants by High School GPA Range, 2013-2016 Freshman Cohorts.*

	JumpStart Participants		Non-Participants		
First-Semester GPA	n	M (SD)	n	M (SD)	t
Above 3.20	548	3.03 (.66872)	10,859	3.12 (.70997)	-3.060*
Below 3.20	278	2.33 (.85378)	3,250	2.28 (.85378)	1.017
Overall	834	2.63 (.95221)	14,222	2.93 (.89190)	-8.646**

Note: First-time, full-time students; 47 cases (0.3%) were excluded listwise due to the absence of a first-year GPA
**p < .05. ** p < .001*

There was a significant difference in the mean first-year GPA of JumpStart participants and non-participants with high school GPA's above 3.20. The effect size was small, d = .1305. For students with a high school GPA below a 3.20, there was not a significant difference in the mean first-year GPA of JumpStart participants and non-participants (2.28).

Further, a series of descriptive means and t-test analyses were conducted to examine the difference in the mean first-year GPA for JumpStart participants and non-participants by ethnicity, gender, and residency status. Table 17 shows comparison of mean first-year GPA and t-test results by groups. There was a significant difference in the mean first-year GPA for all groups except Other ethnicities and Mississippi residents. The mean first-year GPA was lower for JumpStart participants for every marker except Black/African American students. Black/African American JumpStart participants recorded a significantly higher mean first-year GPA (2.59) than Black/African American non-participants (2.41). The effect size was small to medium, d = .22409.

Table 17. *Comparisons of Mean First-Year GPA by Student Background Characteristic, 2013-2016 Freshman Cohorts.*

	JumpStart Participants		Non-Participants		
First-Year GPA	n	M *(SD)*	n	M *(SD)*	t
Gender: Male	441	2.66 (.79398)	6,058	2.76 (.89581)	-2.529*
Gender: Female	393	2.93 (.69822)	8,171	3.04 (.74891)	-2.921*
Ethnicity: White	660	2.82 (.75442)	11,340	2.99 (.78852)	-5.353**
Ethnicity: Black	115	2.59 (.69853)	1,627	2.41 (.89581)	2.621*
Ethnicity: Other	59	2.76 (.90951)	1,261	2.95 (.83969)	-1.753
Residency: MS	267	2.85 (.74189)	6,323	2.87 (.88989)	-.336
Residency: Non	567	2.76 (.77054)	7,906	2.97 (.77007)	-6.274**
Overall	834	2.79 (.76232)	14,229	2.92 (.82692)	-4.904**

Note: First-time, full-time students; 47 cases (0.3%) were excluded due to absence of a first-year GPA
**p < .05 ** p < .001*

First Semester vs. First Year GPA. A series of paired samples t-tests were conducted to compare first-semester GPA and first-year GPA for JumpStart participants and non-participants. Table 18 shows the results. For JumpStart participants, there was a significant difference in the first-semester GPA (M = 2.63, SD = .95221) and first-year GPA (M = 2.79, SD = .76232), t(833) = -10.269, p < .01. In contrast, there was not a significant difference in the first-semester GPA (M = 2.93, SD = .89190) and first-year GPA (M = 2.92, SD = .82596), t (14221) = .896, p = .370, for non-participants. Thus, JumpStart participants made a significant progression between first-semester GPA and first-year GPA.

Table 18. *t-test Results, Means, and Standard Deviations for First-Semester/First-Year GPAs of JumpStart Participants and Non-Participants, 2013-2016 Freshman Cohorts.*

	n	M *(SD)*	t	*df*	Sig.	MD
Jumpstart						-
First-Sem/First-Year GPA	834	2.63 (.95221)	-10.269	833	.000	.15319
Non-Participants		2.92 (.82468)				
First-Sem/First Year GPA	14222	2.93 (.89190	.896	14221	.370	.00279
		2.92 (.82596)				

**First-time, full-time students*

Research Question Three

Hypotheses three, four, five, and six within research question three address retention and four-year graduation. Preliminary analyses for each hypothesis includes descriptive statistics of retention and graduation rates overall, by cohort year, by high school GPA range, and student background characteristics. Effect size was also calculated where there were significant differences observed. To address hypotheses three, four, five, and six, a series of logistic regression analyses were used to predict the dichotomous dependent variables of interest: spring semester, year two, and year three, and four-year graduation. "Logistic regression is appropriate when the outcome of interest is dichotomous (i.e., 0, 1)" (Pike, Hansen, & Childress, 2014, p. 8). Logistic regression "is one of several predictive modeling techniques that explore the association between the input variables and the logarithm of the odds of a categorical response variable. [It] uses the logit function and predicts the probability of an event occurring based on several numerical and/or categorical predictors." (Raju & Schumacker, 2015, p. 572). When "trying to predict membership of only two categorical outcomes the analysis is known as binary logistic regression" (Field, 2013, p. 761).

The probability a student being retained or graduated (Y=1) is given by p and the probability of a student not being retained or not graduated (Y= 0) is given by 1-p. "The ratio of p / (1-p) is known as odds ratio or Exp(B). The odds ratio helps in the interpretation of a logistic regression model. The odds of an event (i.e., retention to spring) occurring is the probability of an event occurring (i.e., student retaining to spring) divided by the probability of an event not occurring (i.e., student not retaining to spring)) (Raju & Schumacker, 2015, citing Hosmer & Lemeshow, 2000). Exp(B), "is an indicator of the change in odds resulting from a unit change in the predictor" (Reinheimer & McKenzie, 2011, p. 32). Odds ratios can be used to interpret statistically significant effects (Pike, Hansen, & Childress, 2014). While the researcher cannot

conclude that any factors "cause" retention, logistic regression can conclude whether or not there is a statistically significant relationship between variables.

Hypothesis Three. Hypothesis three examined whether JumpStart participants are more likely to be retained from fall-to-spring semester than non-participants. Hypothesis three is stated in the null form: There is no significant difference in the fall-to-spring semester retention of JumpStart participants compared to non-participants.

Preliminary descriptive analysis and t-tests. Table 19 includes descriptive statistics, means, and t-tests for retention to spring semester for the 2013-2016 cohorts. Overall, 95.1% of JumpStart participants were retained to spring semester, while 93.7% of non-participants were retained to spring. There was not a statistically significant difference in spring semester retention for JumpStart participants and non-participants, t(961.006) = 1.763, p = .078.

Table 19. *Comparisons of Mean Spring Semester Retention Rates by Year, 2013-2016 Freshman Cohorts.*

Retained	JumpStart Participants			Non-Participants			
Spring	n	M (SD)	%	n	M (SD)	%	t
2013	177	.9718 (.16615)	97.2%	3,384	.9403 (.23695)	94.0%	2.394*
2014	208	.9615 (.19277)	96.2%	3,547	.9442 (.22961)	94.4%	1.248
2015	245	.9306 (.25463)	93.1%	3,654	.9330 (.25014)	93.3%	-.141
2016	205	.9463 (.22589)	94.6%	3,690	.9320 (.25182)	93.2%	.799
Overall	835	.9509 (.21621)	95.1%	14,275	.9372 (.24255)	93.7%	1.763

Note: First-time, full-time students
**p < .05. ** p < .001*

By cohort year, 2013 was the only cohort year where there was a statistically significant difference in spring retention for JumpStart participants and non-participants.

Table 20 includes descriptive statistics, means, and t-tests for retention to spring semester for the 2013-2016 cohorts by high school GPA range. There was not a significant difference in spring semester retention for students who entered UM with a school GPA above 3.20.

JumpStart students who entered UM with a high school GPA below 3.20 were retained a significantly higher rate than non-participants who entered with high school GPAs in the same range. The effect size was small, d = .116178.

Table 20. *Comparisons of Mean Spring Semester Retention Rates by High School GPA Range 2013-2016 Freshman Cohorts.*

Retained Spring	JumpStart Participants			Non-Participants			
	n	M (SD)	%	n	M (SD)	%	t
Above 3.20	549	.9636 (.18753)	96.3%	10,888	.9516 (21462)	95.2%	.183
Below 3.20	278	.9245 (.26474)	92.5%	3,264	.8909 (.31177)	89.1%	1.997*
Overall	835	.9509 (.21621)	95.1%	14,275	.9372 (.24255)	93.7%	1.763

Note: First-time, full-time students

**p < .05. ** p < .001*

Table 21 includes descriptive statistics, means, and t-tests for retention to spring semester for the 2013-2016 cohorts by student background characteristics. There was a significant difference in retention to spring semester for Black/African American students (97.4%) (ES, d = .188352), Other minority students (98.3%) (ES, d = .262467), Mississippi residents (97.4%) (ES, d = .14148), and female students (97.0%) (ES, d = .131929). The difference was not significant for males, Whites, and non-resident students.

Table 21. *Descriptive Analysis of Spring Semester Retention Rates by Groups, 2013-2016 Freshman Cohorts.*

	JumpStart Participants			Non-Participants			
Retained Spring	n	M (SD)	%	n	M (SD)	%	t
Gender: Male	441	.9342 (.24814)	93.4%	6,078	.9301 (.25504)	93.0%	.332
Gender: Female	394	.9695 (.17206)	97.0%	8,197	.9425 (.23273)	94.3%	2.987*
Ethnicity: White	661	.9440 (.23005)	94.4%	11,370	.9398 (.23779)	94.0%	.440
Ethnicity: Black	115	.9280 (.25856)	97.4%	1,635	.9248 (.26384)	92.5%	3.016*
Ethnicity: Other	59	.9831 (.13019)	98.3%	1,270	.9299 (.25538)	93.0%	2.887*
Residency: MS	267	.9738 (.16008)	97.4%	6,340	.9461 (.22592)	94.6%	2.718*
Residency: Non	568	.9401 (23743)	94.0%	7,935	.9302 (.25485)	93.0%	.961
Overall	835	.9509 (.21621)	95.1%	14,275	.9372 (.24555)	93.7%	1.763

Note: First-time, full-time students
**p < .05 ** p < .001*

Logistic Regression. A logistic regression analysis was performed to test hypothesis three and predict whether JumpStart participants are more likely to be retained to spring semester than non-participants. One hundred and three cases (0.7%) were excluded listwise from the model due to missing high school GPA or ACT composite score. The independent variables included in the model were: JumpStart participation, gender, residency, Black/African American, Other minorities, high school GPA, and ACT score. Table 22 shows the results from the logistic regression model with spring semester retention as the dependent variable.

Table 22. *Logistic Regression Predicting Fall-to-Spring Retention, 2013-2016 Freshman Cohorts.*

							95% CI	
Predictors	B	S.E.	Wald	*df*	Sig.	Exp (B)	Lower	Upper
JumpStart*	.438	.166	7.008	1	.008	1.550	1.121	2.145
Gender	-.126	.072	3.097	1	.078	.881	.766	1.014
Residence**	.282	.078	13.113	1	.000	1.326	1.138	1.545
HS GPA**	.689	.083	69.244	1	.000	1.992	1.694	2.343
ACT Comp.**	.063	.011	35.008	1	.000	1.065	1.043	1.087
Black	-.028	.117	.057	1	.811	.972	.774	1.222
Other	-.126	.072	1.071	1	.301	.884	.700	1.117
Constant	-1.212	.283	18.356	1	.000	.298		

Note: First-time, full-time students; 103 cases (0.7%) were excluded listwise due to absence of a high school GPA or ACT composite score;
**p<.05. **p< .001*

Overall, the logistic regression model containing all independent variables was statistically significant, x^2 (7, n = 15,007) = 244.136, p < .001, Cox and Snell R^2 = .016, Nagelkerke R^2 = .043, indicating the model was able to distinguish between students who were retained to spring and students who were not retained to spring. The model as a whole explained between 1.6% (Cox and Snell R Square) and 4.3% (Nagelkerke R Squared) of the variance in retention to spring, and correctly classified 93.8% of cases. Four of the independent variables were found to be significant predictors of fall-to-spring semester retention: JumpStart, residence, high school GPA, and ACT score.

JumpStart participation was a significant, positive predictor of spring semester retention, Wald(1) = 7.008, p = .008, Exp(B) = 1.550. The Exp(B) value indicated that being a JumpStart participant increased the odds of retention to spring semester by a factor of 1.550. Therefore, the null hypothesis was rejected. JumpStart participants are more likely to be retained to spring semester than non-participants.

The strongest positive predictor of spring semester retention was high school GPA, Wald(1) = 69.244, p = .000, Exp(B) = 1.992. The Exp(B) value indicated that for each additional point of GPA (e.g., from a 2.00 to a 3.00 GPA), an individual would be 1.992 times more likely to be retained to spring semester. Residency also had a significant, positive correlation with spring semester retention, Wald(1) =13.113, p = .000, Exp(B) = 1.326. The Exp(B) value indicated Mississippi residents were 1.326 more likely to be retained to spring semester than nonresident students. Finally, ACT composite score was a significant, positive predictor of spring retention, Wald(1) = 35.008, p = .000, Exp(B) = 1.065. The Exp(B) value indicated that for each additional point of ACT composite score, an individual would be 1.065 times more likely to be retained to spring.

Based on the results from the logistic regression analysis, high school GPA was the best pre-college predictor of retention, followed by JumpStart participation, residency status, and ACT composite score. Gender, Black/African American, and Other were not significant predictors of whether or not a student would be retained to spring semester.

Hypothesis Four. Hypothesis four examined whether JumpStart participants are more likely to be retained to year two than non-participants. Hypothesis four is stated in the null form: There is no significant difference in year two retention of JumpStart participants compared to non-participants.

Preliminary descriptive analysis and t-tests. Table 23 includes descriptive statistics, means, and t-tests for retention to spring semester for the 2013-2016 cohorts. Overall, 84.9% of JumpStart participants were retained to year two, compared with 85.5% of non-participants, a difference that was not statistically significant, $t(15078) = -.454$, $p = .650$.

Table 23. *Comparisons of Mean Year Two Retention Rates by Year, 2013-2016 Freshman Cohorts.*

	JumpStart Participants			Non-Participants			
Retained Year Two	n	M (SD)	%	n	M (SD)	%	t
2013	177	.8644 (.34333)	86.4%	3,381	.8459 (.36109)	84.6%	.666
2014	207	.8744 (.33221)	87.4%	3,539	.8649 (.34184)	86.5%	.388
2015	245	.8041 (.39772)	80.4%	3,644	.8562 (.35093)	85.6%	-2.00*
2016	205	.8634 (.34425)	86.3%	3,682	.8512 (.35597)	85.1%	.480
Overall	834	.8489 (.35834)	84.9%	14,246	.8546 (.35249)	85.5%	-.454

Note: First-time, full-time students; 30 cases (0.2%) were removed listwise from analysis due to exemption from retention analysis.
**p < .05. ** p < .001*

There was not a significant difference in retention to year two for JumpStart participants and non-participants in 2013, 2014, or 2016. In 2015, retention to year two was significantly lower for JumpStart participants.

Table 24 includes descriptive statistics, means, and t-tests for retention to year two retention for the 2013-2016 cohorts by high school GPA range. There was not a significant difference in year two retention for either GPA range.

Table 24. *Comparisons of Mean Year Two Retention Rates by High School GPA Range, 2013-2016 Freshman Cohorts*.

	JumpStart Participants			Non-Participants			
Retained Year Two	n	M (SD)	%	n	M (SD)	%	t
Above 3.20	548	.8850 (.31927)	88.5%	10,872	.8825 (.32209)	88.3%	.183
Below 3.20	278	.7842 (.41214)	78.4%	3,251	.7638 (.42483)	76.4%	.771
Overall	835	.9509 (.21621)	95.1%	14,275	.9372 (.24255)	93.7%	1.763

Note: First-time, full-time students; 30 cases (0.2% were excluded listwise due to exemption from retention analysis; 103 cases (0.7%) were excluded listwise due to absence of a high school GPA or ACT composite score.
**p < .05. ** p < .001*

Table 25 includes descriptive statistics, means, and t-tests for retention to year two for the 2013-2015 cohorts classified by student background characteristic. Black/African American students were retained to year two at a significantly higher rate of 90.4% compared to 83.5% of Black/African American non-participants (ES = 0.203851). There was not a significant difference in year two retention for any other group.

Table 25. *Descriptive Analysis of Year Two Retention Rates by Groups, 2013-2016 Freshman Cohorts.*

	JumpStart Participants			Non-Participants			
Retained Year Two	n	M (SD)	%	n	M (SD)	%	t
Gender: Male	441	.8322 (.37411)	83.2%	6,054	.8366 (.36973)	83.7%	-.241
Gender: Female	393	.8677 (.33927)	86.8%	8,192	.8679 (.33860)	86.8%	-.013
Ethnicity: White	661	.8411 (.36581)	84.1%	11,349	.8598 (.34720)	86.0%	-1.339
Ethnicity: Black	114	.9035 (.29657)	90.4%	1,630	.8350 (.37132)	83.5%	2.342*
Ethnicity: Other	59	.8305 (.37841)	83.0%	1,267	.8335 (.37271)	83.4%	-.059
Residency: MS	266	.8947 (.30747)	89.5%	6,326	.8693 (.33713)	86.9%	1.211
Residency: Non	568	.8275 (.37818)	82.8%	7,920	.8429 (.36389)	84.3%	-.944
Overall	834	.8489 (35834)	84.9%	14,246	.8546 (.35249)	85.5%	-.454

Note: First-time, full-time students; 30 cases (0.2%) were excluded listwise due to exemption from retention analysis.

**p < .05 ** p < .001*

Logistic Regression. A logistic regression analysis was performed to test hypothesis four and predict whether JumpStart participants are more likely to be retained to year two than non-participants. Thirty cases (0.2%) were removed from the overall sample prior to analysis due to exemption from retention analysis for this dependent variable year. One hundred three cases (.7%) were excluded listwise due to missing high school GPA or ACT composite score. The full model contained seven independent variables: JumpStart participation, gender, residency, minority status, high school GPA, and ACT score. Table 26 shows the results from the logistic regression analysis with year two retention as the dependent variable.

Table 26. *Logistic Regression Predicting Year Two Retention, 2013-2016 Freshman Cohorts.*

							95% CI	
Predictors	B	S.E.	Wald	*df*	Sig.	Exp (B)	Lower	Upper
JumpStart	.133	.102	1.703	1	.192	1.143	.935	1.396
Gender*	-.137	.049	7.642	1	.006	.872	.792	.961
Residence*	.178	.053	11.308	1	.001	1.195	1.077	1.326
HS GPA**	.748	.058	163.509	1	.000	2.112	1.884	2.369
ACT Comp.**	.054	.007	55.292	1	.000	1.055	1.040	1.070
Black	.040	.082	.242	1	.623	1.041	.887	1.222
Other*	-.199	.081	5.992	1	.014	.819	.698	.961
Constant	-2.104	.197	113.517	1	.000	.122		

Note: First-time, full-time students; 30 cases (0.2%) were excluded listwise due to exemption from retention analysis; 103 cases (0.7%) were excluded listwise due to absence of a high school GPA or ACT composite score.
**p < .05. ** p < .001*

Overall, the full model containing all predictors was statistically significant, x^2 (7, N= 14,977) = 485.397, p < .001, Cox and Snell R^2 = .032, Nagelkerke R^2 = .057, indicating the model was able to distinguish between students who were retained to year two and students who were not retained to year two. The model as a whole explained between 3.2% (Cox and Snell R Square) and 5.7% (Nagelkerke R Square) of the variance in retention to spring, and correctly classified 85.5% of cases. As shown in Table 26, five of the independent variables were found to

be significant predictors of year two retention: gender, residence, high school GPA, ACT score, and Other minority. JumpStart was not a significant predictor of year two retention; therefore, the null hypothesis was not rejected.

First, high school GPA was a statistically significant, positive predictor of retention to year two, Wald(1) = 163.509, p = .000, Exp(B) = 2.112. The Exp(B) value indicated that for each additional point of GPA (e.g., from a 2.00 to a 3.00 GPA), and individual would be 2.112 times more likely to be retained to year two. Residency was also a positive, statistically significant predictor of year two retention, Wald(1) = 11.308, p = .001, Exp(B) = 1.195. The Exp(B) value indicated that in-state Mississippi residents were 1.195 times more likely to be retained to year two than nonresident students. ACT composite score remained a positive, significant variable, Wald(1) = 55.292, p = .000, Exp(B) = 1.055. The Exp(B) value indicated that for each additional point of ACT composite score, an individual would be 1.055 times more likely to be retained to year two.

Gender was a negative, but statistically significant predictor of year two retention, Wald(1) = 7.642, p = .006, Exp(B) = .872. The Exp(B) value is .872, less than one, indicating that as the predictor increases, the odds of the outcome occurring decreases. In this study, gender was coded as female = 0 and male = 1. Therefore, being a male student reduced the odds of retention to year two by a factor of .872. Similarly, Other minority status was also a significant, negative predictor of year two retention, Wald(1) = 5.992, p = .014, Exp(B) = .819. The Exp(B) value of .819, less than one, indicates that as the predictor increases, the odds of the outcome occurring decreases. In this study, Other Minorities/Unknown was coded as White and Black/African American = 0 and Other/Unknown = 1; therefore, other minorities were less likely to be retained to year two than White and Black/African Americans students. The Exp(B) value

for JumpStart was 1.143, indicating a positive relationship with year two retention, but it was not significant.

Hypothesis Five. Hypothesis five examined whether JumpStart participants are more likely to be retained to year three than non-participants. Hypothesis five is stated in the null form: There is no significant difference in the year three retention of JumpStart participants compared to non-participants.

Preliminary descriptive analysis and t-tests. Table 27 includes descriptive statistics, means, and t-tests for retention to year three for the 2013-2015 cohorts. Overall, there was not a significant difference in the year three retention rates for JumpStart participants and non-participants, $t(11191) = -.687$, $p = .492$.

Table 27. *Descriptive Analysis for Retention to Year Three for JumpStart Participants and Non-Participants, 2013-2015 Freshman Cohorts.*

	JumpStart Participants			Non-Participants			
Retained Year Three	n	M (SD)	%	n	M (SD)	%	t
2013	177	.7797 (.41565)	78.0%	3,381	.7504 (.43286)	75.0%	.879
2014	207	.7729 (.41565)	77.3%	3,539	.7669 (.42888)	76.7%	.201
2015	245	.7020 (.45830)	70.2%	3,644	.7603 (.42705)	76.0%	-1.929
Overall	629	.7472 (.43495)	74.7%	10,564	.7593 (.42754)	75.9%	-.687

Note: First-time, full-time students; 22 cases (0.2%) were removed listwise from analysis due to exemption from retention analysis.
**p < .05. ** p < .001*

Individual cohort year three retention rates were not statistically significant for any cohort year.

Table 28 includes descriptive statistics, means, and t-tests for retention to year three for the 2013-2015 cohorts by high school GPA range. There was not a statistically significant difference in the year three retention of JumpStart participants and non-participants who entered UM with a high school GPA above 3.20 and below 3.20.

Table 28. *Comparisons of Mean Year Three Retention Rates by High School GPA Range 2013-2015 Freshman Cohorts.*

	JumpStart Participants			Non- Participants			
Retained Spring	n	M (SD)	%	n	M (SD)	%	t
Above 3.20	398	.7915 (.40678)	79.2%	7,917	.8093 (.39290)	80.9%	-.881
Below 3.20	225	.6711 (.47086)	67.1%	2,559	.6088 (.48811)	60.1%	1.896
Overall	629	.7472 (.43495)	74.7%	10,564	.7593 (.42754)	75.9%	-.687

Note: First-time, full-time students; 22 cases (0.2%) were excluded listwise due to exemption from retention analysis; 85 cases (0.8%) were excluded due to absence of a high school GPA or ACT composite score.

**p < .05. ** p < .001*

Table 29 includes descriptive statistics for retention to year three for the 2013-2015 cohorts classified by student background characteristic. The year three retention rate for JumpStart participants is significantly higher for two key demographics: Black/African American students and Resident students. Black/African American JumpStart participants were retained to year three at a significantly higher rate of 78.0% compared to 65.4% of Black African American non-participants. The effect size was small to medium at d = .28139. Resident students were retained to year three at a significantly higher rate of 82.2%, compared with 75.8% of non-participants. The effect size was small, d = .158399. In contrast, non-resident JumpStart participants were retained at a rate of 71.0%, a significantly lower rate than non-participants who were retained at a rate of 76.1%. The effect size was small, d = .11697.

Table 29. *Descriptive Analysis for Retention to Year Three by Groups, 2013-2015 Freshman Cohorts.*

		JumpStart Participants (n=629)		Non-Participants (n=10,564)			
Retained Year Three	n	M (SD)	%	n	M (SD)	%	t
Gender: Male	331	.7289 (.44519)	72.9%	4,493	.7374 (.44011)	73.7%	-.337
Gender: Female	297	.7677 (.42303)	76.8%	6,071	.7755 (.41729)	77.6%	-.315
Ethnicity: White	494	.7429 (.43747)	74.3%	8,423	.7779 (.41570)	77.8%	-1.731
Ethnicity: Black	91	.7802 (.41639)	78.0%	1,218	.6544 (.47577)	65.4%	2.752*
Ethnicity: Other	44	.7273 (.45051)	72.7%	923	.7281 (.44520)	72.8%	-.011
Residency: MS	208	.8221 (.38334)	82.2%	4,696	.7577 (.42854)	75.8%	2.360*
Residency: Non	421	.7102 (.45420)	71.0%	5,868	.7606 (.42677)	76.1%	-2.206*
Overall	629	.7472 (.43495)	74.7%	10,564	.7593 (.42754)	75.9%	-.687

Note: First-time, full-time students; 22 cases (0.2%) were excluded listwise due to exemption from retention analysis.

**p < .05. ** p < .001*

Logistic regression. A logistic regression analysis was performed to test hypothesis five and predict whether JumpStart participants are more likely to be retained to year three than non-participants. Twenty-two cases were removed from the 2013, 2014 and 2015 sample from analysis due to exemption from retention analysis for the dependent variable of interest. 85 cases (.8%) were excluded listwise due to missing high school GPA or ACT composite score. The full model contained seven independent variables: JumpStart participation, gender, residency, minority status, high school GPA, and ACT score. Table 30 shows the results from the logistic regression analysis with year three retention as the dependent variable.

Table 30. *Logistic Regression Predicting Year Three Retention, 2013-2015 Freshman Cohorts.*

							95% CI	
Predictors	B	S.E.	Wald	*df*	Sig.	Exp (B)	Lower	Upper
JumpStart	.118	.098	1.430	1	.232	1.125	.928	1.364
Gender*	-.100	.048	4.282	1	.039	.905	.823	.995
Residence	.003	.051	.004	1	.949	1.003	.907	1.110
HS GPA**	.870	.058	227.627	1	.000	2.387	2.132	2.672
ACT Comp.**	.068	.007	93.282	1	.000	1.070	1.056	1.085
Black*	-.250	.076	10.888	1	.001	.778	.671	.903
Other Min.*	-.267	.081	10.788	1	.001	.766	.653	.898
Constant	-3.384	.195	301.120	1	.000	.034		

Note: First-time, full-time students; 22 cases (0.2%) were excluded listwise due to exemption from retention analysis; 85 cases (0.8%) were excluded due to absence of a high school GPA or ACT composite score.
**p < .05. ** p < .001*

Overall, the full model containing all predictors was statistically significant, x^2 (7, N= 11,108) = 743.954, p < .001, Cox and Snell R^2 = .065, Nagelkerke R^2 = .097, indicating the model was able to distinguish between students who were retained to year three and students who were not retained to year three. The model as a whole explained between 6.5% (Cox and Snell R Square) and 9.7% (Nagelkerke R Square) of the variance in retention to spring, and correctly classified 75.9% of cases. As shown in Table 30, five of the independent variables were found to be significant predictors of year three retention: gender, high school GPA, ACT score,

Black/African American, and Other Minority. JumpStart was not a significant predictor of year three retention; therefore, the null hypothesis was not rejected.

The strongest predictor of retention to year three was high school GPA. High school GPA was a positive, statistically significant predictor, Wald(1) = 227.627, p = .000, Exp(B) = 2.387. The Exp(B) value indicated that for each additional point of GPA (e.g., from a 2.00 to a 3.00 GPA), an individual would be 2.387 times more likely to be retained to year two. ACT composite score was also a positive, statistically significant predictor, Wald(1) = 93.282, p = .000, Exp(B)=1.070. The Exp(B) value indicated that for each additional point of ACT composite score, an individual would be 1.070 times more likely to be retained to year three.

Conversely, gender was a significant, negative predictor of retention to year three, Wald(1) = 4.282, p = .039, Exp(B) = .905. The Exp(B) value is .905, which is less than one, indicating that as the predictor increases, the odds of the outcome occurring decreases. In this study, gender was coded as female = 0 and male = 1; therefore, being a male student reduced the odds of being retained to year three by a factor of .905. Being a Black/African American student was also a significant, negative predictor of retention to year three, Wald(1) = 10.888, p = .001, Exp(B) = .778. The Exp(B) value of .778, less than one, indicated that as the predictor increases, the odds of the event occurring decreases. In this study, ethnicity was dummy coded with Black/African American coded as White and Other Minorities/Unknown = 0 and Black/African American = 1; therefore, Black/African American students were less likely to be retained to year three than White and Other minority students by a factor of .778. Similarly, being a member of an other ethnic minority was also a negative, statistically significant predictor of year three retention, Wald(1) = 10.788, p = .001, Exp(B) = .766. The Exp(B) value of .766 indicates that as the predictor increases, the odds of the outcome occurring decreases. In this study, other ethnic

minorities were coded as White and Black/African American = 0 and Other minorities = 1; therefore, other minority students were less likely to be retained to year three than White and Black/African American students. While the Exp(B) value for JumpStart was 1.125, indicating a positive relationship with year three retention, it was not significant. Residence was also not a statistically significant predictor of retention to year three.

Hypothesis Six. Hypothesis six examined whether JumpStart participants are more likely to graduate in four years than non-participants. Hypothesis six is stated in the null form: There is no significant difference in the four-year graduation rate of JumpStart participants compared to non-participants. A six-year graduation rate is typically used for four-year institutions, but the researcher was unable to determine the six-year graduation rate because the population in this study has not been enrolled for six years; therefore, a four-year graduation rate was used for this study.

Preliminary descriptive analysis and t-tests. Table 31 includes descriptive statistics for four-year graduation of the 2013 cohort. Overall, 42.4% of JumpStart participants enrolled in the fall 2013 semester had graduated by the end of the spring semester 2017, while 45.6% of non-participants had graduated from UM. The difference was not statistically significant, $t(195.087) = -.854$, $p = .394$.

Table 31. *Descriptive Analysis for Four-Year Graduation of JumpStart Participants and Non-Participants, 2013 Freshman Cohort.*

	JumpStart Participants			Non-Participants			
Graduated Year Four	n	M (SD)	%	n	M (SD)	%	t
2013	177	.4237 (.49802)	42.4%	3,381	.4564 (.49817)	45.6%	-.854

Note: First-time, full-time students; 3 cases (0.1%) were removed listwise from analysis due to exemption from graduation analysis.
**p < .05. ** p < .001*

Table 32 includes descriptive statistics, means, and t-tests for four-year graduation for the 2013 cohort by high school GPA range. There was not a significant difference in the four-year graduation rates for JumpStart participants and non-participants who entered UM with a high school GPA above a 3.20 or below 3.20.

Table 32. *Comparisons of Mean Four-Year Graduation Rate by High School GPA Range 2013 Freshman Cohort.*

	JumpStart Participants			Non-Participants			
Graduated Year Four	n	M (SD)	%	n	M (SD)	%	t
Above 3.20	111	.5315 (.50127)	53.2%	2,401	.5523 (.49736)	55.2%	-.429
Below 3.20	65	.2462 (.43412)	24.6%	948	.2247 (.41759)	22.5%	.400
2013	177	.4237 (.49802)	42.4%	3,381	.4564 (.49817)	45.6%	-.854

Note: First-time, full-time students; 3 cases (0.1%) were removed from analysis due to exemption from retention analysis; 40 cases (0.7%) were excluded listwise due to absence of a high school GPA or ACT composite score.

**p < .05. ** p < .001*

Table 33 examines descriptive statistics for four-year graduation of the 2013 cohort by student background characteristic. There was not a significant difference in the four-year graduation rate for JumpStart participants compared with non-participants for any group.

Table 33. *Descriptive Analysis for Four-Year Graduation by Groups, 2013 Freshman Cohort.*

	JumpStart Participants			Non-Participants			
	n	M (SD)	%	n	M (SD)	%	
Graduated Year Four							t
Gender: Male	87	.3448 (.47807)	34.5%	1,474	.3507 (.47737)	35.1%	-.112
Gender: Female	90	.5000 (.50280)	50.0%	1,907	.5380 (.49868)	53.8%	-.706
Ethnicity: White	144	.4306 (.49688)	43.1%	2,626	.4943 (.50006)	49.4%	-1.498
Ethnicity: Black	26	.3462 (.48516)	34.6%	460	.2478 (.43222)	24.8%	1.121
Ethnicity: Other	7	.5714 (.53452)	57.1%	295	.4441 (.49771)	44.4%	.668
Residency: MS	55	.4182 (.49781)	41.8%	1,542	.4241 (.49437)	42.4%	-.088
Residency: Non	122	.4262 (.49657)	42.6%	1,839	.4834 (.49986)	48.3%	-1.231
Overall	177	.4237 (.49802)	42.4%	3,381	.4564 (.49817)	45.6%	-.854

*3 cases (0.1%) were excluded listwise due to exemption from retention analysis.

**p < .05. ** p < .001*

Logistic regression. A logistic regression analysis was performed to test hypothesis six and predict whether JumpStart participants are more likely to graduate in four years than non-participants. Three cases (0.1%) were removed from the overall sample prior to analysis due to exemption status from retention analysis for the dependent variable of interest. Forty cases (.7%) were excluded listwise due to missing high school GPA or ACT composite score. The full model contained seven independent variables: JumpStart participation, gender, residency, Black, Other Minority, high school GPA, and ACT score. Table 34 shows the results from the logistic regression analysis with four-year graduation as the dependent variable.

Table 34. *Logistic Regression Predicting Four-Year Graduation, 2013 Freshman Cohort.*

							95% CI	
Predictors	B	S.E.	Wald	*df*	Sig.	Exp (B)	Lower	Upper
JumpStart	.053	.172	.096	1	.757	1.055	.753	1.478
Gender**	-.758	.079	91.307	1	.000	.468	.401	.547
Residence**	-.369	.083	19.744	1	.000	.692	.588	.814
HS GPA**	1.352	.105	165.214	1	.000	3.865	3.145	4.750
ACT Comp.**	.077	.011	46.932	1	.000	1.080	1.056	1.104
Black**	-.668	.132	25.666	1	.000	.513	.396	.664
Other Min.	-.253	.140	3.282	1	.070	.777	.591	1.021
Constant	-6.174	.341	328.046	1	.000	.002		

Note: First-time, full-time students; 3 cases (0.1%) were removed from analysis due to exemption from retention analysis; 40 cases (0.7%) were excluded listwise due to absence of a high school GPA or ACT composite score.
**p < .05. ** p < .001*

Overall, the full model containing all predictors was statistically significant, x^2 (7, N= 3,518) = 695.312, p < .001, Cox and Snell R^2 = .179, Nagelkerke R^2 = .24, indicating the model was able to distinguish between students who graduated in year four and students who did not graduate in year four. The model as a whole explained between 17.9% (Cox and Snell R Square) and 24.0% (Nagelkerke R Square) of the variance in retention to spring, and correctly classified 54.5% of cases. As shown in Table 34, five of the independent variables were found to be

significant predictors of four-year graduation: gender, residence, Black, high school GPA, and ACT score. JumpStart was not a significant predictor of four-year graduation; therefore, the null hypothesis was not rejected.

The strongest statistically significant predictor of four-year graduation remained high school GPA, Wald(1) = 165.213, p = .000, Exp(B)= 3.865. The Exp(B) valued indicated that for each additional point of GPA (e.g., from a 2.00 to a 3.00 GPA), an individual would be 3.865 more likely to graduate in four years. ACT composite score was also a significant, positive predictor of four-year graduation, Wald(1) = 46.932, p = .000, Exp(B) = 1.080. The Exp(B) value indicated that for each additional point of ACT composite score, an individual would be 1.080 times more likely to graduate in four years.

Gender was a negative, significant predictor of four-year graduation, Wald(1) = 91.307, p = .000, Exp(B) = .468. The Exp(B) value is .468, which is less than one, indicating that as the predictor increases, the odds of the outcome occurring decreases. In this study, gender was coded as female = 0 and male = 1; therefore, males are significantly less likely to graduate in four years by a factor of .468. Black/African American minority status was also a negative, significant predictor of four-year graduation, Wald(1) = 25.666, p = .000, Exp(B) = .513. The Exp(B) value of .513, less than one, indicated that as the predictor increases, the odds of the event occurring decreases. In this study, ethnicity was dummy coded with Black/African American coded as White and Other minorities = 0 and Black/African American = 1. Therefore, Black/African American students were less likely to graduate in four years than White and Other minority students by a factor of .513. The logistic regression model showed that JumpStart participation and Other minority were not significant predictors of four-year graduation.

IMPLICATIONS FOR PROBLEM OF PRACTICE

This study contributes to the understanding of summer bridge programs by adding evidence of outcomes regarding GPA, retention, and completion. Several conclusions emanate from the results regarding JumpStart participation for the 2013 to 2016 cohorts of UM freshmen.

Examinations of first-semester and first-year GPA revealed that JumpStart participants earned significantly lower first-semester and first-year GPAs than non-participants. These findings conflicted with previous studies that showed bridge participants earned significantly higher GPAs than non-bridge participants (Cabrera et al., 2013; Allen & Bir, 2012). Other prior studies found no significant difference in GPA for participants and non-participants (Walpole et al., 2008; Wolf-Wendel et al., 1999). However, JumpStart participants also entered UM with significantly lower high school GPAs non-participants, $t(15{,}083) = -9.481$, $p < 0.001$, so these results are not unexpected. ACT composite score was also significantly lower for JumpStart participants, $t(949.105) = -4.129$, $p < 0.001$. Despite the fact that the GPA of JumpStart participants was significantly lower than non-participants in both first-semester GPA and first-year GPA, JumpStart participants made greater progress from the end of the first-semester to the end of the first-year, indicating JumpStart may have had some "delayed" positive impact. For JumpStart participants, there was a significant difference in the first-semester GPA and first-year GPA, $t(833) = -10.269$, $p < .001$. In contrast, there was not a significant difference in the first-semester GPA and first-year GPA of non-participants, $t(14221) = .896$, $p = .370$.

The most comprehensive impact of JumpStart on retention was seen in the spring semester. The logistic regression model showed JumpStart to be a significant, positive predictor of spring semester retention. The correlation between JumpStart and spring semester retention was very weak (r = .013). Although descriptive analysis and t-tests indicated there was not a significant difference, t(961.006) = 1.763, p = .078, in the overall spring retention rate of JumpStart participants (95.1%) and non-participants (93.7%), spring semester retention rates were significantly higher for the following groups of JumpStart participants: female, t(464.991) = 2.987, p = .003, Black/African American, t(161.308) = 3.016, p = .003, Other minorities, t(80.472) = 2.887, p = .005, and resident students, t(312.404) = 2.718, p = .007. The largest effect sizes were seen for Black/African American and other minority students, both small to medium effect sizes.

The longer-term impact of JumpStart participation on retention beyond spring semester is less straightforward. The logistic regression models indicated JumpStart was not a significant predictor of retention to year two or year three. The Exp(B) odds ratios were positive; however, the confidence intervals for year two and year three retention fall below one and above one, indicating that the intervention (JumpStart) could either increase or decrease the likelihood of success. Since both numbers are not over one, we have less confidence in the direction of the relationship (Field, 2013). Correlation results indicated very weak negative correlations between JumpStart and year two retention (r = -.004) and year three retention (r = -.006). The finding of no significant association with year two retention was consistent with some studies (Barnett et al., 2012; Warpole et al., 2008; Kodama, Han, Moss, Myers, & Farruggia, 2016; Wolf-Wendel et al., 1999), but contrary to others (Wachen, Pretlow, & Dixon, 2016; Cabrera et al., 2013; Suzuki, Amrein-Beardsley, & Perry, 2012; Ackermann, 1999).

Descriptive statistics and t-tests also revealed no significant difference in the retention rate of JumpStart participants and non-participants to year two or year three. However, a deeper examination of retention for specific groups of students by GPA range and student background characteristics showed significant findings for key demographics. T-tests revealed year two retention was significantly higher for Black/African American JumpStart participants. Similarly, there was a significant difference in the year three retention for Black/African American and resident JumpStart participants. We know that the decision to stay or leave college can be impacted by a number of factors, some of which cannot be controlled by the institution such as family or financial issues. However, these results indicate JumpStart may have a more positive long-term impact on the retention of specific populations of students.

With regard to four-year graduation, the logistic regression model indicated JumpStart was not a significant predictor of completion. Further, descriptive statistics and t-tests showed there was not a significant difference between the four-year graduation rate of JumpStart participants and non-participants. The correlation between JumpStart and four-year graduation was negative and very weak ($r = -.014$). There was only one cohort that was included in the study that was enrolled for four years. This could have negatively influenced the results on graduation rate. Prior studies that have examined completion have found higher completion rates for bridge program participants (Douglas & Attewell, 2012; Wachen et al., 2016; Murphy, Gaughan, Hume, & Moore, 2010). There was not a significant difference in the four-year graduation rate for JumpStart participants and non-participants when broken down by high school GPA or student background characteristics. Although not significant, the four-year graduation rate was higher for Black/African American and other minority JumpStart participants compared with non-participants. The trend of a positive impact of summer bridge

programs on completion rates for minority students confirm findings from previous studies of SBPs impact on graduation for Black/African American students and less academically prepared students (Douglas & Attewell, 2014; Bir & Myrick, 2015).

The findings of this study suggest that JumpStart could be a particularly positive intervention for Black/African American students. There was not a significant difference in the first-semester GPA of Black/African American JumpStart participants (M = 2.51) and non-participants (M = 2.45); however, there was a significant difference in the first-year GPA of Black/African American JumpStart participants (M = 2.59) compared to Black/African American non-participants (M = 2.41), t(141.893) = 2.621, p = .010. Further, spring semester retention rates were significantly higher for Black/African American JumpStart participants, t(161.308) = 3.016, p = .003. Retention rates for Black/African American students were also significantly higher retention to year two, t(139.021) = 2.342, p = .021, (90.4% compared to 83.5%) and retention to year three, t(108.338) = 2.752, p = .007 (78.0% compared to 65.4%). There was not a significant difference in the four-year graduation rate of Black/African American JumpStart participants (34.6%) and non-participants (24.8%). These findings support prior studies that have shown that bridge programs are particularly beneficial to underrepresented populations (Allen & Bir, 2012; Douglas & Attewell, 2014; Suzuki et al., 2012; Bir & Myrick, 2015; Kodama et al., 2016; Garcia, 1991). More empirical research is needed to explore this issue further.

The logistic regression models revealed other important findings. The pre-college academic variables high school GPA and ACT composite score were significant predictors of all four retention and completion measures in this study. These results strongly support the findings of previous studies indicating that high school GPA and ACT scores are important determinants

of college success and graduation (Farmer & Hope, 2015). While ACT score was a significant predictor for college retention and graduation for each outcome, this research showed that high school GPA was the stronger predictor for retention and graduation. Of the student background characteristics included in the logistic regression models, gender, residency, and minority status were found to have a significant effect on retention and graduation for at least some of the dependent variables of interest. Gender had a significant, negative impact on retention to year two, retention to year three, and four-year graduation, meaning that males were less likely to be retained or graduate within four years. These findings support other studies that have shown strong links between student success and gender (Astin & Oseguera, 2005). Additionally, being a resident of Mississippi also had a significant, positive effect on retention to spring semester, year two, and four-year graduation, meaning in-state residents were more likely to be retained to spring semester, year two, and graduate in four years. Prior research has shown that being a member of a historically underrepresented minority group is negatively related to retention and degree completion (Astin & Oseguera, 2005). While minority status was not consistently related to all retention and completion outcomes in this study, prior research was confirmed for certain outcomes. Other minority status was significant and negatively related to retention to year two. Both Black/African American and Other ethnic minority students were significantly less likely to be retained to year three. Finally, being a Black/African American student was a significant, negative predictor of four-year graduation. Neither Black/African American nor Other minority status was significantly related to retention to spring semester.

Examining these results in light of the descriptive analysis and t-tests related to JumpStart in hypotheses four, five, and six, it is of note that although gender (negative), minority status (negative), and residency (positive) were significant predictors of retention and completion –

positively or negatively depending upon the student background characteristic – that those results did not translate comparatively to the t-tests results comparing JumpStart participants and non-participants. This study found no significant differences between males, females, residents, or non-residents for retention to year two and four-year graduation, and no significant differences between males, females, and non-residents for year three retention. It is possible that JumpStart is one factor that influenced retention and completion and led to specifically, the finding of no significant difference for males and non-resident students when the logistic regression results suggest that they were retained at a lower level overall. This study did not consider interactions with other campus support programs or interactions between JumpStart participation and student background characteristics. Those topics could be examined in future research.

SUMMARY OF THE MANUSCRIPT

Summer bridge programs (SBPs) – which take place in the summer prior to the students' critical first year of college – are one popular programmatic intervention schools have added to assist students with the transition from high school to college and provide students with the academic and social tools they need to be successful. Despite their popularity, a review of relevant literature indicated that bridge programs are not routinely evaluated to measure their effectiveness. This study sought to add to the knowledge about summer bridge programs by conducting a study of UM's JumpStart summer bridge program. Data was retrieved from the Office of Institutional Research Effectiveness and Planning, the Office of the Registrar, and the Office of Pre-College Programs. Key findings of the study related to JumpStart included:

1. JumpStart participants earned significantly lower first-semester and first-year GPAs than non-participants; however, participants entered UM with significantly lower high school GPA and ACT composite scores.
2. Logistic regression analysis showed JumpStart to be a significant, positive predictor of retention to spring semester. JumpStart was not a significant predictor of retention to year two, retention to year three, or four-year graduation.
3. Females, Black/African American, Other Minorities, and resident students were retained to spring semester at a significantly higher rate than freshmen who did not participate in JumpStart.

4. Black/African American JumpStart participants showed particularly positive results related to GPA and retention. The first-year GPA of Black/African American students were significantly higher for JumpStart participants. Further, retention rates for Black/African American JumpStart participants were significantly higher in spring semester, year two, and year three.

The third manuscript will highlight key findings of the study and outline recommendations for JumpStart program staff and UM administrators on ways to enhance JumpStart to meet program goals.

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MANUSCRIPT III: IMPLEMENTATION AND DISSEMINATION PLAN

SUMMARY OF THE PROBLEM OF PRACTICE

This study sought to contribute to the body of existing literature by evaluating the effectiveness of the University of Mississippi's JumpStart Summer Bridge Program and its impact on student success outcomes, including GPA, institutional retention, and degree completion, to establish concrete actionable data for program staff and university administrators. Emily Ferris, the scholar-practitioner for this study, serves as Associate Director of the Division of Outreach and Continuing Education at the University of Mississippi, the division that houses the university's JumpStart Summer Bridge Program. Bridge programs are a well-established programmatic intervention in higher education; however, research has shown that institutions are not routinely evaluating summer bridge programs in order to assess their effectiveness and determine whether the programs are meeting their intended outcomes (Strayhorn, 2011; Cabrera, Miner, & Milem, 2013). Furthermore, the evaluation of individual summer bridge programs is important because programs differ from institution to institution (Cabrera et al., 2013). The following research questions were developed in hopes of better evaluating the effectiveness of the JumpStart Summer Bridge Program: (1) What is the descriptive profile of JumpStart participants from the 2013-2016 freshman cohorts, including gender, residency, ethnicity, high school core grade point average, and ACT composite, (2) Is there a significant difference in the mean GPA of JumpStart participants compared to non-JumpStart participants for first-semester GPA and first-year GPA, and (3) Are JumpStart participants more likely to be retained than non-

JumpStart participants for fall-to-spring retention, year two retention, year three retention, and four-year graduation?

American colleges and universities continue to face questions surrounding timely degree attainment (Shapiro et al., 2017). In response to the increased spotlight on degree completion, colleges and universities have implemented many programs and student support services to improve institutional retention and completion. Summer bridge programs (SBPs) have been one popular programmatic intervention offered at colleges and universities across the United States (Allen & Bir, 2012; Mayhew et al., 2016; Cabrera et al., 2013; Sablan, 2014). The increased prevalence of summer bridge programs has stemmed from Tinto's (1993) longitudinal model of institutional departure, which includes four key components of a student's experience with an institution: pre-entry characteristics, goals and commitments, institutional experiences, and academic and social integration. This theory suggests that interventions like summer bridge programs – which seek to increase students' involvement in the campus community and provide access to college-level coursework – should lead to improvements in student persistence and other academic outcomes due to increased academic and social integration into the institution. SBP's assist students with the transition from high school to college and providing them with academic and social tools needed to succeed in college in the summer before their first year (Allen & Bir, 2012; Garcia & Paz, 2009; Walpole, Simmerman, Mack, Mills, Scales, & Albano, 2008; Mayhew et al., 2016). SBP's have the unique twofold goal of both academically and socially prepared students for college life (Cabrera et al., 2013; McCurrie, 2009). Despite the popularity and spread of bridge programs at colleges and universities around the country, relatively little is known about their effectiveness (Sablan, 2014; Strayhorn, 2011; Cabrera et al., 2013). Studies have shown mixed results in terms of SBP participation and its relationship

between retention, completion, and grade point averages (GPA) (Walpole et al., 2008; Ackermann, 1991; Evans, 1999; Logan et al., 2000; Wolf-Wendel, Tuttle, & Keller-Wolff, 1999). Therefore, criticism has mounted that there is a need for more research on summer bridge programs (Walpole et al., 2008; Allen & Bir, 2012).

The program under review in the current study is JumpStart, a residential summer bridge program at UM. Unlike many other summer bridge programs that target specific groups of students, such as underprepared, at-risk students, high-performing, or discipline-specific students, JumpStart is open to all entering first-time, full-time freshmen at UM regardless of academic ability or student background characteristics. JumpStart is promoted as a way for incoming students to get a "jumpstart" on their college experience and "give students the tools they need to make their next four years a success" ("JumpStart", Pre-College, 2017, para. 2). The program is structured the same for all participants regardless of their level of academic preparedness. There are three available sessions: Session One (four weeks), Session Two (four weeks), and August Intersession (two weeks). Participants have the opportunity to earn three credits (August Intersession) or six credit hours (Session One or Session Two). In addition to earning academic credits, JumpStart students participate in SkillStart, a series of programming designed to teach students study, time management, leadership, and team-building skills. Other current features of JumpStart include the requirement to attend proctored study hall, participate in mandatory orientation, and having a JumpStart peer leader to mentor them during the summer.

Permission was granted from the University of Mississippi's Institutional Review Board (IRB) to access existing UM data pertaining to UM students. Permission was also granted from the UM Office of the Registrar to access college outcomes. The Office of Pre-College Programs provided the Office of Institutional Research, Effectiveness, and Planning (IREP) with JumpStart

participant lists for the 2013 to 2016 freshman cohorts. IREP provided existing institutional data on JumpStart participants and non-participants, including student background characteristics (e.g., ethnicity, gender, residency), precollege academic variables (e.g., ACT score, high school GPA), and college outcomes (e.g., first-year GPA, end-of-first year GPA, retention, and completion records). Using Tinto's (1993) longitudinal model of institutional departure as its theoretical framework, preliminary analyses for the quantitative study included (a) descriptive analyses, (b) correlational analyses, and (c) t-test analyses to examine possible differences between JumpStart participants and non-participants on the study variables. To address the study's primary research questions, a series of t-tests were conducted to examine differences between first-semester GPA and first-year GPA for JumpStart participants and non-participants. T-tests were also conducted to examine differences in retention and completion among JumpStart participants and non-participants. Logistic regression was used to address hypotheses regarding retention and four-year graduation. The central variable of interest was participation in JumpStart. Background variables included in each model were gender, ethnicity, and residency. Precollege academic variables included in the model included high school GPA and ACT composite. All analyses were conducted in SPSS version 25.

SUMMARY OF THE FINDINGS

The current study examined the effectiveness of the JumpStart Summer Bridge Program at the University of Mississippi on student success outcomes. Quantitative findings revealed mixed results with regard to the impact of JumpStart on first-semester-GPA, first-year GPA, retention, and four-year graduation rates. Level of academic preparedness and student background characteristics from Tinto's longitudinal model of institutional departure shed light on the results for specific groups of students.

Descriptive Profile of JumpStart Participants, 2013 – 2016

One of the primary goals of this study was to provide UM administrators and JumpStart program staff with information regarding who participates in the JumpStart summer bridge program. Of 15,100 first time, full-time students in the 2013 – 2016 freshmen cohorts, 835 students (5.5%) participated in JumpStart. While these students represent a range of abilities and backgrounds, descriptive statistics, frequencies, and cross-tabulations revealed key commonalities among participants. JumpStart participants were majority male (52.8%), predominantly White (79.2%), and more often non-residents (68.0%). Minority participation in JumpStart included 13.8% Black/African American students and 7.1% Other Minority students. The high school GPA of participants ranged from 1.81 to 4.00. ACT composite score ranged from 16 to 35. Table 1 denotes the frequency of high school GPA and ACT composite scores for the 2013 – 2016 JumpStart cohorts.

Table 1. *Frequency of High School GPA and ACT Composite Score, 2013 – 2016 Freshmen Cohorts.*

	N	%
High School GPA		
4.00 and above	118	14.1%
3.75-3.99	104	12.5%
3.50-3.74	140	16.8%
3.25-3.49	164	19.6%
3.00-3.24	140	16.8%
2.75-2.99	81	9.7%
2.50-2.74	51	6.1%
2.25-2.49	28	3.4%
2.00-2.24	7	0.8%
1.75-1.99	1	0.1%
1.74 and below	0	0.00%
Missing GPA	1	0.1%
ACT Composite Score		
32 or above	44	5.3%
27-31	174	20.8%
23-26	283	33.9%
17-22	325	38.9%
13-16	8	1.0%
12 and below	0	0.00%
Missing ACT	1	0.1%

Note: First-time, full-time students

Given the role of student self-selection into JumpStart, but notably without qualitative data to support this working theory, it would seem based on the majority participant groups that parents of males and non-residents view JumpStart as a particularly favorable option to facilitate transition to college life. Parents and students may feel – as prior research has shown – that participating in a summer transition program helps "new students … learn their way around campus, meet new friends, register for fall classes, begin to develop relationships with faculty, and become acclimated to college coursework" (Wolf-Wendel et al., 1999, p. 8). In turn, each of those things can "increase students' comfort level with their new role as college students, and reduce their anxiety during a period of transition and personal upheaval" (Wolf-Wendel et al., 1999, p. 8).

Analysis of the pre-college academic variables of JumpStart participants and non-participants revealed that JumpStart students are academically less prepared than non-participants. Non-participants had significantly higher high school GPA (3.53) and ACT composite score (24.67) than JumpStart participants (3.38 and 24.08, respectively). This study went further and examined outcomes based upon entering high school GPA above and below 3.20, the level of regular admission to UM. Non-participants (3.73) had a significantly higher mean high school GPA for above 3.20 than JumpStart participants (3.65). There was not a significant difference between JumpStart participants (2.84) and non-participants (2.87) for high school GPAs below 3.20.

First-semester GPA and First-year GPA

Prior studies had shown mixed results on the impact of bridge programs on GPA (Cabrera et al, 2013; Allen & Bir, 2012; Walpole et al., 2008; Wolf-Wendel et al., 1999). For example, Cabrera, Miner, and Milem's (2013) examination of the New Start Summer Program, a voluntary six-week SBP that is available to all incoming first-time, full-time freshmen at the University of Arizona, showed a positive impact on first-year GPA; however, Walpole et al. (2008) and Wolf-Wendel, Tuttle, and Keller-Wolff (1999) found no statistically significant impact on GPA. In response to this study's Research Question Two, the results show that JumpStart participants earned significantly lower first-semester and first-year GPA than non-participants. On one hand, these findings are not unexpected given that JumpStart students enter UM with significantly lower high school GPAs than non-participants. Alternatively, one of the primary goals of JumpStart is to "give students the tools they need to make their next four years of college a success" ("JumpStart", Pre-College, 2017, para. 2), which could be presumed to include academic success. Walpole et al. (2008) noted that the lack of significant effect on GPA "may be due to the relatively short duration of most bridge programs, which are typically only

several weeks during the summer prior to the first year of college and, thus, may be inadequate to prepare some students for the rigors of college work" (Walpole et al., 2008, p. 14-15). This could be especially true given the current structure of JumpStart, which offers students the choice between two four-week sessions or one two-week Intersession that started in 2015. This study did not examine outcomes based on participation in a four-week session or two-week session, but that could be an area of interest for future research. Interestingly, JumpStart participants made a larger progression from the end of the first-semester to the end of the first-year, indicating JumpStart may have had some "delayed" positive impact. For JumpStart participants, there was a significant difference in the first-semester GPA and first-year GPA, $t(833) = -10.269$, $p < .001$. In contrast, there was not a significant difference in the first-semester GPA and first-year GPA of non-participants, $t(14221) = .896$, $p = .370$.

Retention and Four-Year Graduation

Research Question Three addressed the impact of JumpStart participation on spring semester retention, retention to year two, retention to year three, and four-year graduation. Like GPA, prior studies had shown mixed results for the impact of summer bridge programs on retention. Some studies found little to no effect (Walpole et al., 2008; Barnett et al., 2012; Wolf-Wendel et al., 1999), while others found positive effects on retention (Cabrera et al., 2013; Thayer, 2000; Ackermann, 1991; Kodama, Han, Moss, Myers, & Farruggia, 2016; Allen & Bir, 2012; Wachen et al., 2016). The most positive overall impact of JumpStart on retention was retention to spring semester. The logistic regression model revealed that JumpStart was a significant, positive predictor of spring semester retention. However, correlation results indicated there was a weak correlation between JumpStart and spring retention ($r = .013$). While the t-tests did not indicate a significant difference in the overall spring semester retention rates for

JumpStart participants (95.1%) and non-participants (93.7%), spring semester retention rates were significantly higher for females, Black/African American students, Other minorities, and resident students.

The longer-term results for retention and completion beyond spring semester are less clear. JumpStart was not a significant predictor of retention to year two or year three or four-year graduation. Correlations between JumpStart and year two retention (r = -.004) and year three retention (r = -.006) were negative and very weak to non-existent. As other studies have noted, it is possible that expectations of finding long-term impacts on retention from a short-term summer program should be minimized (Barnett et al., 2012). The findings of no significant association with year two retention was consistent with some previous studies (Warpole et al., 2008; Barnett et al., 2012; Wolf-Wendel et al., 1999), but contrary to others (Cabrera et al., 2013; Wachen et al., 2016; Allen & Bir, 2012; Kodama et al., 2016). Statistical t-tests on year two and year three retention revealed no significant difference for JumpStart participants and non-participants. Overall, 84.9% of JumpStart participants were retained to year two, compared with 85.5% of non-JumpStart participants. For year three retention, 74.7% of JumpStart participants were retained to year three, while 75.9% of non-JumpStart participants were retained. A deeper examination of retention for specific groups of students by GPA range and student background characteristics revealed significant differences and possible influences of JumpStart on particular students. There was a significant difference in year two retention for Black/African American JumpStart participants. Similarly, year three retention was significantly higher for both Black/African American students and resident students. These results indicate JumpStart could have a more positive long-term influence on specific populations of students.

With regard to four-year graduation, JumpStart was not a significant predictor of four-year graduation and there was not a significant difference between the four-year graduation rate of JumpStart participants and non-participants. Correlation results indicated a weak, negative correlation between JumpStart and four-year graduation ($r = -.014$). Forty-two point four percent of JumpStart participants enrolled in the fall 2013 semester had graduated from UM by the end of spring semester 2017, compared to 45.6% of non-participants. These results of no significant difference in the four-year graduation rate of JumpStart participants and non-participants conflicted with several prior studies that indicated that summer bridge participants were more likely to graduate within four years (Wachen et al., 2016; Douglas & Attewell, 2014; Murphy, Gaughan, Hume, & Moore, 2010). According to Wachen et al. (2016), "the higher graduation rate suggests that students in the summer bridge program benefit from the 'fast start' that they gain from the college credits earned as part of the summer program" (p. 18). There was only one cohort that was included in the study that was enrolled for four years. This could have negatively influenced the results regarding graduation rate. However, it may also be true that, as studies have noted for retention, a short-term summer program should not be expected to have a long-term impact on completion essentially four years after the intervention. There was not a significant difference in the four-year graduation rate for JumpStart participants and non-participants when broken down by high school GPA or student background characteristic. However, the positive trends of the impact of JumpStart on completion rates for minority students and students with lower high school grades point back to findings from a previous study on SBPs impact on graduation for Black/African American students and less academically prepared students (Douglas & Attewell, 2014; Allen & Bir, 2012; Bir & Myrick, 2015). The impact of JumpStart on these populations should continue to be examined moving forward.

While the outcomes cannot be explicitly attributed to JumpStart, the findings of this study suggest that JumpStart could be a particularly positive intervention for Black/African American students. There was not a significant difference in the first-semester GPA of Black/African American JumpStart participants (M = 2.51) and non-participants (M = 2.45); however, there was a significant difference in the first-year GPA of Black/African American JumpStart participants (M = 2.59) compared to Black/African American non-participants (M = 2.41). Further, spring semester retention was significantly higher for Black/African American JumpStart participants. Retention rates for Black/African American students were also significantly higher retention to year two (90.4% compared to 83.5%) and retention to year three (78.0% compared to 65.4%). There was not a significant difference in the four-year graduation rate of Black/African American JumpStart participants (34.6%) and non-participants (24.8%). These findings support prior studies that have shown that bridge programs are particularly beneficial to students of color, first generation students, and low-income students (Douglas & Attewell, 2014; Suzuki, Amrein-Beardsley, & Perry 2012; Bir & Myrick, 2015; Allen & Bir, 2012; Kodama et al., 2016; Garcia, 1991).

With regard to the results of the logistic regression models for variables other than JumpStart, the pre-college academic variables high school GPA and ACT composite score were significant predictors of all four retention and completion measures in this study. These results strongly support the findings of previous studies indicating that high school GPA and ACT scores are important determinants of college success and graduation (Farmer & Hope, 2015). While ACT score was a significant predictor for college retention and graduation for each outcome, this research showed that high school GPA was the stronger predictor for retention and graduation. Of the student background characteristics included in the logistic regression models,

gender, residency, and minority status had a significant effect on retention and graduation for at least some of the dependent variables of interest. Gender had a significant, negative impact on retention to year two, retention to year three, and four-year graduation, meaning the males were less likely to be retained or graduate in four years. These findings support other studies that have shown strong links between student success and gender (Astin & Oseguera, 2005). Being a resident of Mississippi had a significant, positive effect on retention to spring semester, year two, and four-year graduation. Prior research has shown that being a member of a historically underrepresented minority group is negatively related to retention and degree completion (Astin & Oseguera, 2005). While minority status was not consistently related to all retention and completion outcomes in this study, prior research was confirmed for several outcomes. Other minority status was significant and negatively related to retention to year two. Both Black/African American and Other minority students were significantly less likely to be retained to year three. Finally, being a Black/African American student was significant and negatively related to four-year graduation. Neither Black/African American or Other minority status was significantly related to retention to spring semester.

It is important to also scrutinize the logistic regression results in the context of the descriptive analysis and t-tests comparing JumpStart participants and non-participants. Although gender (negative), minority status (negative) and residency (positive) were significant predictors of retention and completion in the overall regression models, those results did not show themselves in the t-tests comparing JumpStart participants and non-participants. This study found no significant differences between males, females, residents, or non-residents for retention to year two and four-year graduation, and no significant differences between males, females, and non-residents for retention to year three. Therefore, it is possible that JumpStart is one

relationship that influenced the finding of no significant difference for males and non-residents when the logistic regression results suggest they should have been retained or graduated at a lower level. This study did not consider interactions with other campus support programs or interactions between JumpStart participation and student background characteristics. These questions could be examined further in future empirical research.

These findings have important implications for theory and practice as it relates to academic success, retention, and degree completion, particularly as it relates to underrepresented minorities and less academically prepared students. Prior literature is mixed on the impact of bridge programs on retention and graduation, and this study's results are no different. As Barnett et al. (2012) referenced, "simple, short-term interventions yielding strong, long-term effects are difficult to find" (p. 4). However, positive indicators from JumpStart participation can be observed from the increase in GPA from the first-semester to the first-year, spring semester retention, and positive longer-term effects on retention and graduation for minority students. Further research is needed to examine outcomes over a longer period of time and through additional quantitative and qualitative methods. This study only focused on quantitative analysis of a specific set of student success outcomes. It may be possible that much of the impact of bridge programs is indirect rather than direct and could be better measured through additional quantitative and qualitative methods that take into account the lived experience from the student perspective. One early study by Pascarella, Terenzini, and Wolfe (1986) first suggested the idea that any impact between transition programs and student persistence may be indirect. More specifically, the program may have

> had a significant positive influence on students' social integration in their first year and in their subsequent commitment to the institution. The resulting integration into, and

> commitment to, the campus community had a positive effect on persistence, which was demonstrated by a statistically significant positive indirect effect for the summer orientation program. (Wolf-Wendel et al., 1999, p. 9)

Thus, bridge programs can be considered "'a catalyst, precipitating a chain of events that will help students understand and participate fully – and ideally thrive – in their new academic and social environments'" (Wolf-Wendel et al., 1999, p. 9, citing Tinto, 1987, p. 50). Other studies where non-significant quantitative results were found included qualitative findings that demonstrated participants believed the program helped them adjust to college and "facilitated their transition from high school to college- academically, socially, developmentally, and logistically" (Wolf-Wendell et al., 1999, p. 27). Therefore, it may be necessary to consider the holistic experience of the student – from both the quantitative and qualitative perspective – in order to get a full picture of the impact of a summer bridge program.

IMPROVING PRACTICE TO ENHANCE EQUITY, ETHICS, AND SOCIAL JUSTICE

Based on the findings, the JumpStart Summer Bridge Program at the University of Mississippi is showing mixed signs of success. The most positive finding was that JumpStart is a significant predictor of spring semester retention, which occurs in the short term and closest in timing with the program. Positive association from JumpStart participation can also be seen from the increase in GPA from the first-semester to the first-year and longer-term effects on retention and graduation for minority students. In the view of the researcher, the JumpStart Summer Bridge Program at the University of Mississippi could be enhanced by taking these recommended actions: (a) improve and expand college readiness options for students, (b) evaluate available courses and course advising strategies, (c) evaluate recruitment strategies and scholarships, and (d) close existing evaluation gaps by continuing quantitative study and employing qualitative methods to evaluate the student's experience.

Prior to discussing these proposed strategies, a critical first step is for the Director of Pre-College Programs, JumpStart program staff, and university administrators to identify clear program goals and desired outcomes for the JumpStart summer bridge program. Research has shown that SBPs differ wildly in terms of program participation, program administration, program funding, and program curriculum (Sablan, 2014). These differences can manifest themselves in a variety of ways, including targeted participants, financial cost, program length, and program content (Kodama et al., 2016). UM currently promotes JumpStart as a way for incoming students to get a "jumpstart" on their college experience. Promotional materials state

the intent of JumpStart program activities is "to enhance the college experience and give students the tools they need to make their next four years a success" ("JumpStart", Pre-College, 2017, para. 2). The JumpStart program does not identify specific program goals or desired outcomes for students. According to the American Council on Education, "the degree to which institutions can harness their resources to achieve their objectives will depend [in part] upon the clarity of these objectives" ("Institutional Effectiveness", 2018, para. 1). Without a solid understanding of the goals of JumpStart it is next to impossible to identify desired program outcomes much less make informed program decisions related to program participation, program administration, program funding, or program curriculum to improve outcomes. Further, these different program dimensions are – or should be – intimately tied to program outcomes and program evaluation.

Program goals can differ from institution to institution. Some programs may prioritize academic performance measures, including GPA, retention, and graduation, like the metrics examined in this study. An example of a short-term metric of improvement for JumpStart could be for JumpStart to be a significant predictor of year two retention. Other bridge programs may focus on skills related to college readiness, college knowledge, and non-cognitive skills, e.g., classroom skills, time management, study skills, and knowledge of campus resources. Other programs may highlight student socialization and relationships between students, faculty, and staff, or measures like increased self-efficacy or self-confidence. Bridge programs may emphasize the number of participants when enrollment is a priority and the presence of an SBP could be a recruitment tool. Programs may also serve as a logistical service for other academic programs to send students through in order to cover services like housing and meal plans. Stated plainly: JumpStart, with direction from Outreach and university administrators, must determine

and specify the type of bridge program it wants to be and the goals and program outcomes it hopes to achieve.

Depending upon what goals and outcomes that program staff and university administrators prioritize for the JumpStart Summer Bridge Program, the following implementation strategies should be considered.

Improve and Expand Academic and College Readiness Efforts

Quantitative findings from this study revealed that on average JumpStart students enter college less prepared academically than students who do not participate in JumpStart. Non-participants had a significantly higher high school GPA (3.53) and ACT composite score (24.67) than JumpStart participants (3.38 and 24.08, respectively). The high school GPAs for JumpStart participants ranged from 1.81 to 4.00. This study went further and examined outcomes based upon entering high school GPA above and below 3.20, a key GPA marker for regular admission to UM. Sixty-five point seven percent of JumpStart participants from the study years had a high school GPA above a 3.20. Non-participants (3.73) had a significantly higher mean high school GPA for above 3.20 than JumpStart participants (3.65). There was not a significant difference between JumpStart participants (2.84) and non-participants (2.87) for high school GPAs below 3.20. Further, statistical analysis of first-semester GPA and first-year GPA revealed that JumpStart students earned significantly lower first-semester and first-year GPAs than non-JumpStart students.

The reality of existing gaps in academic preparedness and college readiness "mean that some students have fallen behind before they have even stepped foot on campus" (Kodama et al., 2016, p. 2). College readiness is defined as "the level of academic preparation a student needs in order to enroll and succeed without remediation, in a credit-bearing general education course"

(Sablan, 2014, citing Conley, 2008, p. 1040). According to Conley (2008), there are four components to college readiness:

> (a) key cognitive strategies, such as critical analysis, reasoning, and problem solving; (b) key content knowledge – content areas such as writing, Algebra I, and other academic subjects; (c) academic behaviors such as habits for college success, such as time management and study skills; and (d) "college knowledge" – contextual skills and awareness of higher education institutions such as admissions, financial aid, and campus organization. (Sablan, 2014, citing Conley, 2008, p. 1040)

Bridge programs represent one possible way for universities to help fill the college readiness gap for incoming freshmen (Kodama et al., 2016). JumpStart is well positioned to help fill this gap for entering UM freshmen, but to be successful it is necessary for JumpStart to expand its academic support and college readiness efforts to better prepare students to meet the rigorous academic demands of college. Given the study's findings regarding the level of incoming academic preparedness and the first-semester and first-year academic performance of JumpStart participants, it is recommended that the program consider adding intentional, structured, and intensive college readiness initiatives to support students.

First, JumpStart should assess and evaluate the quality of the current academic and college readiness resources that are offered to participants. The current structure of JumpStart includes SkillStart, a series of programming that teaches students about study skills, time management, leadership, and team-building skills. SkillStart sessions are mandatory and held on Tuesdays and Thursdays. Sessions are led by UM faculty, staff, and student leaders. All existing SkillStart sessions should be evaluated to determine whether they are providing sufficient skills development opportunities to students. An increased focus on the four components of college

readiness should be a program goal moving forward, including cognitive strategies, academic content, habits for college success, and campus resources. New or improved programming should address specific skills like good note taking, critical thinking, time management, study group skills, employing classroom strategies, turning in assignments on time, problem solving, and learning how and where to seek help on campus. Studies have indicated that students believe academic skills development helped them successfully integrate into their academic environment (Stolle-McAllister, 2011). JumpStart should offer increased chances for students to develop critical academic and college readiness skills.

The next step to improving and expanding academic and college readiness is adding more structured academic support services like tutoring and other specialized services such as support labs or advising sessions. JumpStart currently requires five hours of mandatory study hours per week for all students, but given the level of academic preparedness of some JumpStart students, additional academic support services are needed. Added faculty tutorials, supplemental instruction, writing skills labs, math skills labs, and peer review sessions can provide students with the academic content tools they need to succeed before they begin college. Access to tutoring and supplemental instruction sessions provides students with extra opportunities to practice and they learn how to seek help and rely on others. These valuable academic skills increase self-confidence and increase student success.

Another step to improve and expand academic and college readiness options is the adoption of early intervention strategies within JumpStart. It is important that institutions identify specific student needs early on and then provide students with necessary skills to be successful. Specifically, early intervention involves detecting student deficiencies as early as possible and, once identified, interventions should be implemented early on until the student has

gained the skills needed for success. Examples of early intervention tactics include monitoring class attendance and academic performance. Further, this study confirmed that high school grades are the most reliable predictors of academic achievement and college persistence. JumpStart program staff should use high school grade and ACT score information to identify potential student needs and target support services early in the session and even prior to arrival on campus.

A final strategy to expand college readiness options for JumpStart students is to continue interactions into the fall semester and throughout the first year. Other studies have pointed out the possibility that brief, four-to-five-week summer programs are not sufficient to affect longer-term outcomes like long-term impacts on retention and degree completion (Wathington, Pretlow, & Barnett, 2016). Many important effects of SBP participation are indirect, specifically that students connect to academic and social support networks that will carry them beyond the brief summer experience. It is possible that longer-term interventions that continue to offer support to students after fall matriculation could increase the impact of JumpStart and other similar summer bridge programs. Options for structures that could continue into the academic year include additional SkillStart sessions, social events, and peer mentoring opportunities with counselors. Mentoring could focus on key demographics of students who have been shown to struggle. For example, male mentoring programs might provide a source of strength and continuity for male students. The same could be said for non-resident students or Black/African American students and students from other ethnic minorities. Ensuring that the backgrounds of successful peer mentors align with JumpStart participants could be one way to help foster closer relationships among students, peer counselors, and staff. Peer relationships, social involvement, and mentoring have led to increased grade point averages and higher persistence rates (Berger &

Milem, 1999). Effective peer mentoring helps to engage new students and create a supportive environment.

Evaluate Available Courses and Course Advising Strategies

Related to improving and expanding academic and college readiness services, JumpStart should review prior enrollment records and determine the courses students have most commonly taken during JumpStart sessions. Per current policy, JumpStart students are automatically registered for EDHE 105, the University of Mississippi's freshman experience course, unless they are in FASTrack (a first-year, living-learning community) or an intensive modern language program. For their second course, JumpStart students are able to register for other college course offered by UM provided they meet the course prerequisites ("JumpStart", 2018). The JumpStart website includes a list of recommended courses broken down by subject areas, including sciences, mathematics, history, humanities, social sciences, fine arts, and electives. Developmental studies courses are also required for students who do not have a 17 ACT or 400 SAT subject area and recommended for students who scored below a 19 ACT or 450 SAT ("JumpStart", 2018) if the students choose to take one of those subject areas. As part of this analysis, JumpStart should examine the grades participants earn in courses taken in JumpStart. A better understanding of the exact courses JumpStart students select to take and grades earned will help JumpStart program staff identify patterns, successes, and potential roadblocks for students. Further research could also examine JumpStart grades and entering high school GPA, first-semester GPA, and first-year GPA.

Further, it is recommended that JumpStart consider increasing their involvement in course selection in order to foster high expectations and create a cohesive community for program participants. First, the program should consider adding mandatory course requirements

for at-risk or underprepared students. For example, students who do not have above a 19 ACT in mathematics could be required to register for a developmental studies mathematics course for one of their JumpStart courses. Prior studies have shown that underprepared students who took a summer bridge program made significantly better progress toward a degree, whether measured as retention, number of credits attempted, or number of credits accumulated (Douglas & Attewell, 2014). Remedial students who participated in the bridge program were shown to have "gained a significant advantage in academic momentum during their first two years of college as compared to otherwise similar remedial students who did not attend that program" (Douglas & Attewell, 2014, p. 103). Thus, for underprepared students, JumpStart could be positioned as a remedy to college preparedness issues to encourage better academic preparation, academic skills development, and to better propel them into their first year which provides positive academic momentum moving forward.

In addition to mandating course sequences for underprepared students who must take developmental studies courses, JumpStart should consider using a learning community model to register students for other courses. In learning communities, students typically take a set of linked courses and often take as many as three or more classes together. Summer bridge programs are "intensified versions of LCs", but the current structure of JumpStart (where students can take any course they want for one of their courses) misses an opportunity to group JumpStart students together in the same classes to foster peer group support, student involvement in classroom learning and social activities, and greater integration of students' academic and nonacademic lives. By limiting the course options students can register for and identifying three to five options of college-level courses for JumpStart students to take JumpStart can help foster a more engaging classroom community and a more challenging academic environment. JumpStart

counselors could also be recruited based on their experience in specific courses, which could prove helpful with tutoring and peer support. Moreover, the value of requiring students to take EDHE 105 should be discussed and debated. Prior studies have shown that courses that help students understand the demands of college reading and writing are particularly beneficial to students in bridge programs (McCurrie, 2009; Stolle-McAllister, 2011; Wachen et al., 2016). Mathematics courses that meet a requirement for their major also allow for key tutoring and support lab opportunities. It may be more beneficial for JumpStart students to focus on shoring up key academic skills that better prepared them for the rigors of college life and wait to take EDHE 105 in the fall with the rest of their freshman cohort.

Another benefit of limiting course options and providing directed and pre-specified course options for JumpStart students is that it would allow JumpStart staff to more effectively collaborate with academic departments and engage faculty to teach participants and offer more opportunities to cultivate stronger faculty/student connections. Faculty play a major role with helping students adjust to college. Effectively engaging students in classroom discussions, learning the names of students, and providing feedback are several ways faculty can help students' transition. Other bridge programs go so far as to provide pedagogical goals for faculty to instill in the curriculum, including: "(a) active learning and collaborative projects; (b) frequent and varied graded assignments with prompt feedback from the instructor; (c) use of math and English support laboratories; (d) use of web-based resources; (e) close monitoring of attendance in class and during academic support sessions; (f) early intervention for students with poor attendance and academic performance; and (g) co-curricular programs that foster integration into the university culture and campus life" (Wachen et al., 2016, p. 8). Working with academic departments to identify professors or instructors to teach courses for the program would deepen

the connection between academia and the other elements of the program and allow students to more effectively establish networks with faculty.

Another avenue JumpStart staff could consider is introducing students to high-impact practices like service learning. Service learning has been shown to help students build self-confidence, integrate academic and social experiences, and reinforce their connection and sense of belonging to the institution. All of these things could have a positive impact on JumpStart participants.

Evaluate Recruitment Strategies and Scholarships

This study's findings related to the descriptive profile of JumpStart participants identified 835 of 15,100 first-time, full-time students from 2013 – 2016 who participated in UM's summer bridge program. JumpStart participants accounted for 5.5% of the freshmen cohort over the four-year period examined for this study. Table 2 details program participation for each cohort year.

Table 2. *JumpStart Program Size by Year, 2013 – 2016 Freshman Cohorts.*

	2013	2014	2015	2016	Total
JumpStart (n)	177	208	245	205	835
Non-Participants (n)	3,384	3,547	3,654	3,690	14,275

**First-time, full-time students*

To begin with, as part of development of overall program goals, JumpStart should set target enrollment goals for each year based on capacity, staff, funding, and other considerations. Target enrollment goals may be helpful to stabilize program enrollment in future years. Furthermore, recruitment strategies should be evaluated to align with the scope and mission the program as outlined in program goals and outcomes.

Unlike many summer bridge programs, JumpStart participation is voluntary and open to all first-time, first-year admitted students at UM. While participants represented a range of

abilities and backgrounds, descriptive findings of this study revealed that JumpStart participants were majority male (52.8%), predominantly White (79.2%) and more frequently non-residents from outside of Mississippi (68.0%). Minority participation in JumpStart included 13.8% Black/African American students and 7.1% Other Minority students. Given that students self-select into JumpStart it would seem that non-resident students view JumpStart as a particularly favorable option to help facilitate a successful transition to college life. This is consistent with previous studies that have shown that parents and students believe participating in a transition program like JumpStart helps students feel more comfortable in the collegiate environment (Wolf-Wendel et al., 1999). Other bridge programs identify, recruit, and target students to participate in the programs based on a variety of factors, including membership in target populations (first-generation, low-income, underrepresented minority students), interest in a specific major (STEM, Engineering, etc.), or high school GPA or other test scores (Sablan, 2014). Based upon program goals, the JumpStart Summer Bridge Program at UM should consider whether targeted recruitment of certain populations is appropriate.

One specific population for which recruitment strategies should be evaluated at UM is Black/African American and other minority students. As seen in Table 3, data from Institutional Research Effectiveness and Planning established that the percentage of Black/African American student enrollment in JumpStart was equal to or higher than the percentage of Black/African American students in that cohort year's overall first-time, full-time freshman cohort ("New Freshmen", Enrollment Trends, UM Tableau, 2018).

Table 3. *JumpStart Black/African American Participants, 2013 – 2016.*

	2013	**2014**	**2015**	**2016**	**TOTAL**
Black/African American					
JumpStart	26	38	28	23	115
(%)	(14.6%)	(18.2%)	(11.3%)	(11.2%)	(13.8%)
UM	490	442	388	438	1,758
(%)	(13.7%)	(11.7%)	(9.9%)	(11.2%)	(11.6%)

Note: First-time, full-time students

However, information from IREP and conversations with JumpStart program staff indicated a high probability that most minority students enter JumpStart through participation in other UM program interventions like Grove Scholars (an academic program for Ole Miss Opportunity Scholars in STEM majors) or FASTrack (a first-year, living learning community). For example, in 2016, the first year of the Grove Scholars programs, 15 of 23 Black/African American JumpStart participants were associated with Grove Scholars. The findings of this study suggest that JumpStart could be a particularly positive intervention for Black/African American students. There was a significant difference in the first-year GPA of Black/African American JumpStart participants (M=2.59) compared to non-participants (M=2.41). Further, retention rates for Black/African American students were significantly higher to spring semester (97.2% compared to 92.5%), retention to year two (90.4% compared to 83.5%), and retention to year three (78.0% compared to 65.4%). There was not a significant difference in the four-year graduation rate of Black/African American JumpStart participants (34.6%) and non-participants (24.8%), although the trend was positive.

In order to increase minority enrollment, JumpStart should consider partnerships with other campus departments and programs to increase awareness about the JumpStart summer bridge program. For example, UM hosts the MOST Conference for rising high school seniors.

The goal of the MOST Conference is to expose prospective Black/African American students "to leadership activities, academic offerings, campus resources, faculty, staff, and student leaders" (MOST Conference, 2018). Ole Miss Opportunity Scholars, the Black Student Union, FASTrack, and Luckyday are other groups that JumpStart could consider collaborating with to recruit students and increase awareness about the Jumpstart bridge program. The literature has shown summer bridge programs to be impactful for underprepared or underrepresented populations (Ackermann, 1991; Garcia, 1991; Suzuki et al., 2012; Walpole et al., 2008). Thus, it could be that these populations at UM could benefit more from JumpStart than other groups of students if barriers to participation could be removed.

This study's logistic regression results showed gender (negative), minority status (negative), and residency (positive) to be significant predictors of retention and completion; however, those results were not reflected in the t-tests comparing JumpStart participants and non-participants. This study found no significant differences between males, females, residents, or non-residents for retention to year two and four-year graduation and no significant difference for males, females, or non-residents for retention to year three. Therefore, while these results cannot be explicitly attributed to JumpStart, JumpStart participation may have played a role in the finding of no significant difference when the logistic regression results suggest males, non-residents, and minority students should have been retained or completed at lower levels. It is possible that "those who choose to participate … are more anxious or more concerned with their decision to attend [UM] and therefore might be more likely than the control group to leave the institution without the benefit of participating in the program" (Wolf-Wendel et al.,1999, p. 28). Additional research is needed to address questions surrounding the lived experience of the student.

Further, JumpStart should re-examine its current scholarship policy in light of its program goals and outcomes. First, it would be helpful to conduct an analysis of similar summer bridge programs and assess how fees and scholarships are structured for resident/non-resident students and other key demographics. Current JumpStart policy calls for all students enrolled in JumpStart to receive a half-tuition scholarship at the in-state level for $1023.75 from the University of Mississippi. The scholarship reduces the total cost per session to $2218.75 for a resident student and $4266.25 for a non-resident student. The cost for August Intersession JumpStart is lower due to reduced meal, housing, and tuition for only one course ("Costs", Pre-College, 2017). Table 4 shows the total scholarship investment by UM (M. DeLoach, personal communications, February 21, 2018). There are also costs associated with running the program incurred by the Division of Outreach and Continuing Education.

Table 4. *JumpStart Scholarship Investment Total, 2013-2016.*

Year	Scholarship Total
2013	$134,539.00
2014	$129,707.00
2015	$133,292.00
2016	$213,894.00

Consideration should be given as to whether scholarship dollars could be distributed more effectively based on need, academic performance, or other metrics. For example, despite the higher cost of JumpStart for non-resident students, non-resident enrollment has been higher than resident enrollment in each of the study's cohort years. Non-resident enrollment ranged from 61.7% to 71.7% of the JumpStart cohort in the years examined by this study. Table 5 shows the breakdown in program participation by resident status.

Table 5. *JumpStart Enrollment by Resident Status, 2013-2016.*

Cohort Year	Resident Students	Non-Resident Students	Total
2013	55	123 (69.1%)	178
2014	80	129 (61.7%)	209
2015	76	172 (69.4%)	248
2016	58	147 (71.7%)	205
Total	269	571	840

Note: First-time, full-time students

Non-resident students bring with them a valuable diversity of background and educational experience to UM and they are welcome members of the UM family. Efforts should be made to ensure than non-resident students are successful in JumpStart and at UM, including many already mentioned with program improvements related to academic support, course advising, and social supports like peer mentoring. Whether the scholarship is a key determinant of registration for JumpStart should be considered. Scholarship dollars may be more effectively directed to other populations of students. On the other hand, if recruitment or enrollment are determined to be key goals associated with JumpStart, it may be helpful for scholarship policies to continue to benefit all students equally. As part of its scholarship analysis, JumpStart should also examine issues related to cost-effectiveness. Few institutions have examined bridge programs based on cost-effectiveness (Wachen et al., 2016); thus, "little is known about the benefits of SBPs relative to their costs to higher education institutions" (Sablan, 2014).

Another aspect to consider as a part of scholarship decisions is the interplay between JumpStart and other financial aid, including Pell grants. Pell grants are available for JumpStart students who qualify for federal financial aid, but students must complete a Federal Application for Federal Student Aid (FAFSA) by June 30 of each year in order to determine eligibility ("Frequently Asked Questions", Pre-College, 2017). This study did not explore the number of students who utilized federal financial aid to participate in JumpStart, but the high cost of

JumpStart could be a barrier to participation, particularly among students with demonstrated financial need, which has historically included minority or underprepared students. Other programs like Arizona's New Start Summer Bridge Program make what they call the "Pell Promise" to students, which promises that "all students who qualify for any amount of federal Pell grant assistance for New Start will be able to attend the program using only their federal Pell grant" ("Pell Promise", The University of Arizona, 2018, para. 1). A waiver is provided to cover any remaining balance. The "Pell Promise" is an example of types of financial assistance that could be considered with the redistribution of scholarship dollars.

Close Evaluation Gaps by Continuing Quantitative Study and Employing Qualitative Methods

Research showed that institutions are not routinely evaluating summer bridge programs to assess their effectiveness and determine whether programs re meeting their intended outcomes (Strayhorn, 2011; Cabrera et al., 2013). This study was the first known intensive, multi-year examination of JumpStart as it relates to analysis of participants and the program's impact on student success outcomes like retention and completion at UM. While this study was an important first step in understanding JumpStart's current standing on key performance indicators, evaluation and assessment should continue. Demands for programs to demonstrate their effectiveness at meeting program goals is not going away. Given the increased importance placed on accountability, assessment, and effectiveness in higher education today, and particularly in light of budget constraints, the ability of a program to demonstrate its effectiveness is critical.

Formal program evaluation should continue. To accomplish this, JumpStart should establish a comprehensive evaluation framework, including data collection tools, techniques, and

timelines, with assistance from the Associate Provost for Outreach and the Associate Director of Outreach. The researcher, the Associate Director of Outreach, is well positioned to assist with this effort. Quantitative data methods should continue to be collected, tracked, and improved in order to increase knowledge of program outcomes. This study examined the 2013 to 2016 freshman cohorts at UM, but it was unable to assess fully the impact of JumpStart on longer-term outcomes like graduation for cohorts after 2013. Data and outcomes should be requested from IREP routinely and tracked over a longer period of time (specifically four, five, and six year years after the bridge program intervention) in order to identify the program's long-term impact on graduation rates. Further, JumpStart should examine whether there are differences in outcomes for four-week session or two-week session participants.

In addition to measuring JumpStart participation on key outcome metrics like first-semester GPA, first-year GPA, retention, and completion (as examined in this study), the effect of JumpStart participation on academic self-efficacy, sense of belonging, and academic and social skills should also be measured. End-of-the-summer questionnaires related to student satisfaction should be utilized to provide helpful information to program administrators, but ideally, data should also be collected at the beginning of the program and at various points earlier in the summer in order to gauge students' progress. Further, assessment could also continue into the students' first year on campus and longer to measure the effects of JumpStart participation over time. For example, does effective socialization and integration into campus life lead to increased participation in other activities associated with student success? Examples of data that can be collected include indicators of students' academic and social involvement on campus during their first year, such as engagement with faculty, participation in student organizations, likelihood to form a study group, and participation in other high impact practices (HIPs) like

internships or study abroad (Kuh, 2008). Data from the National Survey of Student Engagement (NSSE), whose purpose is to "collect information … about first-year and senior students' participation in programs and activities that institutions provide for their learning and personal development," could be harvested from IREP for this purpose (NSSE, "About NSSE", 2018, para. 2). Six of the ten HIPs are included in the survey: learning community, service learning, research with faculty, internship or field experience, study abroad, and culminating senior experience or capstone course (NSSE, "High-Impact Practices", 2018).

In addition to quantitative data, qualitative methods should be regularly employed to help JumpStart program administrators and university stakeholders identify program impacts from the student perspective. Qualitative survey questions, focus groups, and individual student interviews are examples of techniques that can provide insight into the lived experiences of the student. For example: Did JumpStart help students form friendships? Did JumpStart increase students' sense of security and confidence? Did JumpStart familiarize students with campus resources? Did JumpStart increase students' understanding of college expectations? Did JumpStart help students develop a deeper sense of community? All of these things are critical to students' academic and social integration to the institution. Students who feel connected to the larger community are likely to better adjust to college.

Other studies have shown that students who participated in bridge programs have an increased sense of control, increased confidence, and increased self-esteem, all of which are important factors related to meeting the challenges of the first year of college (Walpole et al., 2008). Further, in previous studies where non-significant quantitative results were found, qualitative data demonstrated that participants believed the program "facilitated their transition from high school to college – academically, socially, developmentally, and logistically. In other

words, while differences in quantitative outcomes were non-existent or contingent on academic preparation, qualitative outcomes revealed a shared perception among all participants that [the program aided] adjustment to and participation in campus life" (Wolf-Wendel et al., 1999, p. 27). Whether similar findings exist for JumpStart should be further explored.

Table 6 summarizes proposed actions and implementation strategies to discuss with JumpStart program staff.

Table 6. *JumpStart Action Plan.*

Step One A critical first step is for the Director of Pre-College Programs, JumpStart program staff, and university administrators to identify the clear program goals and desired outcomes for the JumpStart summer bridge program. After program goals and outcomes are identified, the following strategies should be considered.	
Proposed Action Improve and Expand College Readiness Options	Implementation Strategies • Assess and evaluate the quality of the current academic and college readiness resources that are offered to students, including SkillStart • Add more structured academic and college readiness service like tutoring and other specialized services such as support labs or advising sessions • Adopt early intervention strategies within JumpStart • Continue interactions or touchpoints into the fall semester and throughout the first year, including a strong peer mentor network
Evaluate Available Courses and Course Advising Strategies	• Conduct an analysis to determine the courses students most commonly take during the summer sessions • Get more involved in dictating what courses students take • Consider adding mandatory course requirements for at-risk or underprepared students • Consider using a learning community model to register students for other courses • Engage the faculty who teach JumpStart participants and offer more opportunities to cultivate stronger faculty/student connections. • Consider service learning opportunities

Action Plan Continued Evaluate Recruitment Strategies and Scholarships	• Set target enrollment goals based on capacity, staff, funding, program goals, and other considerations. • Reevaluate recruitment strategies based on program goals and desired outcomes, • Consider partnerships with existing campus organizations or structures like the MOST Conference, Ole Miss Opportunity Scholars, FASTrack, Luckyday, etc., to increase enrollment of Black/African American and other minority students • Reexamine current scholarship policy in light of its program goals and outcomes
Close Evaluation Gaps by Continuing Quantitative Study and Employing Qualitative Methods	• Establish a comprehensive evaluation framework, including data collection tools, techniques, and timelines • Track data and outcomes over long periods of time (specifically four, five, and six years after the program intervention) in order to identify long-term effects • Track data at various points during the summer and into the students' first year on campus and beyond to measure the effects of participation over time • Track students into their first year on campus and beyond to measure participation in high impact practices and other activities associated with student success • Utilize qualitative data to gain insight into the lived experience of the students

DISSEMINATION AND FUTURE USE OF FINDINGS

This study highlighted mixed results as to the effectiveness of the JumpStart Summer Bridge program at UM. Awareness and increased understanding of baseline quantitative outcomes is a solid place to start for JumpStart and UM begin to identify program goals. Evaluation must continue in order to enhance desired outcomes of the program. Findings of this study will be shared with the Director of Outreach, Director of Pre-College Programs, and JumpStart program staff in order to increase awareness of JumpStart program outcomes and discuss suggested improvements and program changes. The researcher in her role as Associate Director of Outreach and a key driver of assessment and strategic planning within the Division of Outreach will work with JumpStart staff to develop a plan for continued quantitative and qualitative program evaluation. Further, the researcher will work to identify academic journals and/or conferences where the findings of this study may be applicable or of interest.

SUMMARY OF THE MANUSCRIPT

Summer bridge programs (SBPs) are a popular programmatic intervention of colleges and universities to assist students with the transition from high school to college and provide students with the academic and social tools they need to be successful. Despite their popularity, a survey of relevant literature indicated that bridge programs are not routinely evaluated to measure their effectiveness. The purpose of this study was to add to the body of existing literature on summer bridge programs and evaluate UM's JumpStart summer bridge program's impact on student success outcomes including GPA, retention, and completion. Like previous studies, the findings were mixed on the impact of JumpStart on GPA, retention, and completion, which could be related to the short-term length of bridge programs. Key findings of the study included: (a) Jumpstart participants earned significant lower first-semester and first-year GPAs than non-participants; however, participants also entered UM with significantly lower high school GPA and ACT composite scores; (b) logistic regression analysis showed JumpStart to be a significant, positive predictor of retention to spring semester; (c) females, Black/African American, Other minorities, and residents students were retained to spring semester at a significantly higher rate than freshmen who did not participate in JumpStart; and (d) Black/African American JumpStart participants earned a significantly higher first-year GPA; further, retention rates for Black/African American JumpStart participants were significantly higher in spring semester, year two, and year three. This study provided an important baseline understanding of JumpStart's performance on key quantitative metrics identified by the

researcher. Moving forward, JumpStart staff and university administrators must identify clear program goals and desired outcomes for the bridge program. These program goals and outcomes should drive decisions related to the program curriculum, program participation, recruitment plans, program funding, scholarships, and future program evaluation and assessment. Further research is needed to examine program outcomes over a longer period of time and through additional quantitative and qualitative methods that take into account the lived program experience from the student perspective.

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LIST OF APPENDICES

APPENDIX A: RESULTS SUMMARY

Results Summary

RESEARCH QUESTION ONE: *What is the descriptive profile of JumpStart participants from 2013 – 2016?*		
	Significant Difference?	**JumpStart higher (+) or lower (—)?**
JumpStart v. Non-JumpStart		
High School GPA	√	—
ACT Composite	√	—
HS GPA Above 3.20	√	—
HA GPA Below 3.20		—

RESEARCH QUESTION TWO: *Is there a significant difference in the mean GPA of JumpStart participants and non-JumpStart participants for:*		
FIRST-SEMESTER GPA?		
	Significant Difference?	**JumpStart higher (+) or lower (—)?**
JumpStart v. Non-JumpStart	√	—
• Male	√	—
• Female	√	—
• White	√	—
• Black/African American		+
• Other	√	—
• Resident	√	—
• Non-Resident	√	—
• HS GPA Above 3.20	√	—
• HS GPA Below 3.20	√	—
FIRST-YEAR GPA?		
	Significant Difference?	**JumpStart higher (+) or lower (—)?**
JumpStart v. Non-JumpStart	√	—
• Male	√	—
• Female	√	—
• White	√	—
• Black/African American	√	+
• Other		—
• Resident		—
• Non-Resident	√	—
• HS GPA Above 3.20	√	—
• HS GPA Below 3.20		+

FIRST SEMESTER V. FIRST YEAR GPA?		
	Significant Difference?	
JumpStart Participants	√	
Non-JumpStart Participants		

RESEARCH QUESTION THREE: Are JumpStart participants more likely to be retained than non-JumpStart participants to:		
SPRING SEMESTER?		
	Significant Difference?	**JumpStart higher (+) or lower (—)?**
JumpStart v. Non-JumpStart		+
• Male		+
• Female	√	+
• White		+
• Black/ African American	√	+
• Other Minorities	√	+
• Resident	√	+
• Non-Resident		+
• HS GPA Above 3.20		+
• HS GPA Below 3.20	√	+
	Significant Predictor?	**Positive or Negative?**
Logistic Regression		
• JumpStart	√	(+) JumpStart more likely
• Gender		(—)
• Black/ African American		(—)
• Other Minorities		(—)
• Residence	√	(+) MS residents more likely
• High School GPA	√	(+)
• ACT Composite	√	(+)
YEAR TWO?		
	Significant Difference?	**JumpStart higher (+) or lower (—)?**
JumpStart v. Non-JumpStart		—
• Male		—
• Female		=
• White		—
• Black/African American	√	+
• Other Minorities		—
• Resident		+
• Non-Resident		—

• HS GPA Above 3.20		+
• HS GPA Below 3.20		+
Logistic Regression		**Positive or Negative?**
• JumpStart		(+)
• Gender	√	(—) Males less likely
• Black/African American		(+)
• Other Minorities	√	(—) Other min. less likely
• Residence	√	(+) Residents more likely
• High School GPA	√	(+)
• ACT Composite	√	(+)
YEAR THREE?		
	Significant Difference?	**JumpStart higher (+) or lower (—)?**
JumpStart v. Non-JumpStart		—
• Male		—
• Female		—
• White		—
• Black/African American	√	+
• Other		—
• Resident	√	+
• Non-Resident	√	—
• HS GPA Above 3.20		—
• HS GPA Below 3.20		+
	Significant Predictor?	**Positive or Negative?**
Logistic Regression		
• JumpStart		(+)
• Gender	√	(—) Males less likely
• Black/African American	√	(—) Blacks less likely
• Other	√	(—) Other min. less likely
• Residence		(+)
• High School GPA	√	(+)
• ACT Composite	√	(+)
FOUR-YEAR GRADUATION?		
	Significant Difference?	**JumpStart higher (+) or lower (—)?**
JumpStart v. Non-JumpStart		—
• Male		—
• Female		—

• White		—
• Black/African American		+
• Other		+
• Resident		—
• Non-Resident		—
• HS GPA Above 3.20		—
• HS GPA Below 3.20		+
	Significant Predictor?	**Positive or Negative?**
Logistic Regression		
• JumpStart		(+)
• Gender	√	(—) Males less likely
• Black/African American	√	(—) Blacks less likely
• Other		(—) Other min. less likely
• Resident	√	(—) MS residents less likely
• High School GPA	√	(+)
• ACT Composite	√	(+)

VITA

EMILY FERRIS

EDUCATION

The University of Mississippi, Oxford, Mississippi
Doctor of Education, Department of Higher Education, December 2018
Dissertation: Bridge to Student Success?: An Evaluation of the Effectiveness of the University of Mississippi's JumpStart Summer Bridge Program
Chair: Dr. Amy Wells Dolan

The University of Mississippi School of Law, Oxford, Mississippi
Juris Doctor, *Cum Laude*, May 2007

The University of Mississippi, Oxford, Mississippi
Bachelor of Arts, Department of English, *Magna Cum Laude, Honors Scholar*, May 2004

EMPLOYMENT

Associate Director of Outreach, July 2018 – Present
Division of Outreach and Continuing Education
University of Mississippi, Oxford, Mississippi

- Promoted to Associate Director after serving as Program Manager for Planning and Assessment for four years.
- Assists Director of Outreach/Associate Provost for Outreach with oversight of operation to support and lead the Division of Outreach.
- Engages in strategic planning, assessment, organizational analysis, and quantitative and qualitative research and analyses for academic programs and non-academic programs within the Division of Outreach.
- Develops, directs, and administers assessment activities and other evaluations of programs within the Division of Outreach.
- Oversees creation, collection, analyses, and reporting of data, including SACS/COC, Annual Reports, and Legislative Budget Office Strategic Plan.

- Creates, manages, and updates internal policies, procedures, and agreements to ensure compliance with university and state policies.
- Manages, coordinates, and reviews substance of internal and external contracts to ensure compliance with university and state policy.
- Assists the Office of the Provost and Office of General Studies in various high-visibility and ad hoc events and initiatives.
- Provides guidance, leadership, and support for departmental staff.
- Represents the Division of Outreach on behalf of the Director to internal and external constituents.
- Maintains signatory authority for all Outreach accounts.
- Collaborates with Associate Provost for Outreach, Outreach Directors, and external departments on events, workshops, and other initiatives.
- Facilities communication and networking among project participants and external entities.

Instructor, August 2015 - Present
University of Mississippi, Oxford, Mississippi

Courses Taught: EDHE 105 (The Freshman Experience) - 3-credit hour course

- Instructs a 3-credit course with enrollment of approximately 25 first-year students on a variety of topics related to the Freshman Year Experience.
- Educates students on how to adjust to the university environment, including introduction to campus resources, developing a better understanding of the learning process, and acquiring essential survival skills for college.
- Facilitates career and major exploration process, including administering the Myers Briggs Personality Assessment.
- Leads students to experience cultural and social diversity through the promotion of civility, diversity, and campus events.
- Serves as a liaison between students and campus resources for collaborative retention and satisfaction efforts.

Program Manager for Planning and Assessment, July 2014 – July 2018
Division of Outreach and Continuing Education
University of Mississippi, Oxford, Mississippi

- Coordinated strategic planning, assessment, and evaluation practices for the ten units within Outreach. Provided leadership through training opportunities and other support.
- Collected, organized, and maintained data, and prepared reports for units within the Division of Outreach.
- Carried out special projects and initiatives as directed by the Associate Provost.
- Co-planned SEC-U Academic Leadership Development Program's conference held February 26-28, 2016, at the University of Mississippi.

Associate Director of Career Development, August 2011 – July 2014
Cumberland School of Law
Samford University, Birmingham, Alabama

- Developed, coordinated, and presented skills, legal practice, and professional development programs that supported over 400 law students and numerous alumni. Planned and executed 12 weeks of on-campus interviews and year-round resume collection programs. Recruited approximately 60 attorneys to participate in annual mock interview program. Recruited employers and handled logistics for two annual career fairs.
- Advised and counseled over 400 students and alumni on all aspects of career development, including career planning, job search strategies, self-assessment, networking, interview preparation, and professional skills development. Edited and reviewed career-related materials, including resumes and cover letters.
- Built and maintained strong relationships with students, alumni, judges, attorneys, and legal employers. Regularly attended professional networking events and conducted local and regional employee outreach.
- Collected and compiled employment statistics to report to accreditation organizations, including the ABA.
- Partnered collaboratively with other stakeholders in the law school, including the Dean, Admissions, Alumni, and Development to think critically about the law school's resources for short-term and long-term projects.

Counsel, June 2009 – June 2011
Office of Senator Roger Wicker
United States Senate, Washington, DC

- Oversaw a portfolio of policy issues, including Judiciary, Education, Government Reform, and Values; Judicial Nominations, including United States Supreme Court, Court of Appeals, District Court, and high-ranking federal prosecutors; and Ethics inquiries.
- Managed requests for multiple annual appropriations bills.
- Wrote memoranda on policy positions and legislative initiatives; monitored and recommended legislation for sponsorship and voting; frequently updated Senator on active issues within legislative portfolio; and drafted legislation, recruited co-sponsors, and introduced legislation to advance the Senator's goals.
- Analyzed legal and ethical issues and advised Senator and staff, both verbally and through written memoranda, on appropriate courses of action. Routinely interacted with U.S. Senate Ethics Committee staff.
- Drafted communications materials, including letters to government officials and private sector constituents, floor speeches, and talking points for events in D.C. and Mississippi. Managed stakeholder and constituent meetings to educate attendees on the Senator's agenda. Directly managed two Legislative Correspondents.
- Staffed the Senator the Senate Impeachment Trial Committee of Judge Thomas G. Porteous (2010).

Legislative Correspondent, November 2008 – June 2009
Office of Senator Roger Wicker
United States Senate, Washington, DC

- Conducted research for policy and communications staff on issues including: Judiciary, Education, Budget, Immigration, Government Reform, Social Security, Values, Energy, Commerce, Interior, and Army Corps of Engineers.
- Wrote, edited, and distributed statewide constituent correspondence numbering over 5,000 per month.

Legislative Aide, January 2008 – November 2008
Office of Senator Roger Wicker
United States Senate, Washington, DC

- Assisted Legislative staff in constituent correspondence and conducted research for policy and communications staff.
- Managed front office, including greeting constituents and directing phone calls, and communicated the Senator's position on upcoming bills and policy issues to constituents.

SERVICE

Institutional Service at University of Mississippi
Accessibility – University Standing Committee, *Co-Chair*
University Assessment Committee
Assistant Director of Outreach Events & Services Search Committee
Outreach – Advisory Committee for BUS Degree
Inaugural Executive Committee
Inaugural Steering Committee
Inauguration – Investiture Program Committee
Associate Provost and Director of Outreach Search Committee
Assistant Director of College Programs Search Committee
Academic Counselor for General Studies Search Committee
Academic Counselor for General Studies Search Committee
Student Affairs Professional Development Committee
Transfer Task Force

Institutional Service at Cumberland School of Law
Career Development Advisory Board

OTHER PROFESSIONAL LICENSURES

Alabama State Bar (December 2011)
State Bar of Mississippi (October 2007)

COMMUNITY INVOLVEMENT

Lafayette County Literacy Council, *Board Member*